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## Common Responses

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*As part of the public review process, CALFED received several thousand letters and postcards with general statements, such as “Try water conservation before building dams,” and “California needs more storage.” Even though these types of comments did not specifically address the information in the June 1999 Draft Programmatic EIS/EIR, CALFED developed the following common responses to discuss the issues raised by such general statements. The common responses present a broad view of the CALFED Solution and Program elements in response to these general comments.*

*The 23 common responses cover topics ranging from water conservation to water exports and from restoration efforts to growth and planning. Although the common responses are designed to be read separately, CALFED encourages reading all the common responses for a more complete overview of the CALFED Program.*

### COMMON RESPONSE 1. PROGRAMMATIC ENVIRONMENTAL DOCUMENTS AND CALFED PROGRAM OBJECTIVES

This common response addresses comments that reflect uncertainty about the use of a Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and the makeup of the CALFED Bay-Delta Program (CALFED Program).

*Some comments express concern that the descriptions of the alternatives and consequences are too vague while the Program plans are too specific to be “programmatic”; these commentors imply that this somehow violates the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Other consistent themes in comments are that the CALFED Program has not adequately addressed the assumptions used in its analysis of consequences; has not adequately defined mitigation measures; and has not quantified the effects of cost, technical feasibility, assurances, and governance on various resources.*

*Additional commentors have expressed a concern that (1) the Programmatic EIS/EIR does not provide enough “hard science” to make a decision; (2) it is inappropriate for CALFED to defer decisions or projects in order to develop new material, such as the Integrated Storage Investigation, before the federal Record of Decision and state Certification (ROD/CERT) on the Programmatic EIS/EIR because there will not be sufficient time to review the new information before the ROD/CERT is approved; and (3) CALFED has already “made its decision” to implement the Preferred Program Alternative and is not really open to the Programmatic EIS/EIR process.*

**Programmatic Environmental Documentation.** CALFED is using a three-phase process to develop a long-term solution to the problems of the Bay-Delta system. At the end of Phase I in 1996, three broad, concept-level Program alternatives were described. In Phase II (which ends at the issuance of the ROD/CERT), the three alternatives were refined and analyzed—along with the Preferred Program Alternative—in CALFED’s Programmatic EIS/EIR. Phase III follows a final decision on the Programmatic EIS/EIR and begins the implementation stage of the Program.

The Programmatic EIS/EIR is expected to culminate in a final decision documented in the ROD/CERT. This decision on the Program is not designed to approve specific facilities or their locations but to provide a general plan for long-term implementation. The approval of the ROD/CERT will not, in itself, enact

any changes in law or regulation and will not authorize construction of specific projects. Instead, this programmatic decision describes the range of actions that collectively will meet the Program's goals and objectives, and sets the framework for future decisions on these actions. Some of these actions may require new legislation, some may require changes in operation of water facilities, some may require acquisition of land or water rights, and others could require the construction of new facilities. Although the decision affects a much broader geographic area, the decision in the ROD/CERT will be similar to the approval of a general plan for a city or county. General plans set the policies that guide future land use decisions within the plan area. More detailed specific plans then follow the general plans.

In addition to preparing the Programmatic EIS/EIR, two other efforts are occurring during Phase II. The first is the refinement of the components that make up the Program by developing technical, operational, financial, and institutional strategies to use in implementing the Program in Phase III. The second effort is identifying and commencing more detailed evaluation of actions to be implemented within the first 4 years following the conclusion of the programmatic environmental review process. These efforts are described in the Phase II Report and Implementation Plan.

The multitude of Phase II activities has led to some confusion over the level of detail in the Programmatic EIS/EIR and the nature of the decision that will be made as a result. As described previously, although the ROD/CERT will approve a broad plan to guide implementation, it is appropriate—even necessary—to continue refining the plan concurrently to allow a smooth and uninterrupted transition from planning to implementation. To do otherwise would leave a wide break between a programmatic decision and any decisions on implementing specific actions encompassed by the plan. Continuing to analyze and refine the plan also provides the public and agency decision makers with the most current information available to understand how later specific actions may be implemented and what their corresponding environmental impacts may be.

Both NEPA and CEQA require that an agency consider the environmental effects of its actions at the earliest point in time when the analysis is meaningful. During extensive public scoping meetings, the CALFED agencies determined that the wide array of potential actions, the broad geographic area affected, the length of time for implementation, and the inter-related nature of the resources and goals for the CALFED Program indicated that a programmatic level environmental review would allow for fuller disclosure and improve the opportunity for decision makers and the public to consider alternatives. Identifying and analyzing potential future combined effects of a proposal allows a greater opportunity to design actions that avoid, minimize, or mitigate identified impacts. The Programmatic EIS/EIR then will be used to tier more detailed environmental documents for individual actions during Phase III.

Assumptions used in the Programmatic EIS/EIR analyses are clearly laid out in the documentation and were explained in several public meetings held throughout the process. The reader is referred to Chapter 10 and Attachment A in the Programmatic EIS/EIR for detailed information about the public review process and the assumptions, respectively.

As a programmatic-level document, the Programmatic EIS/EIR does not analyze site-specific impacts of future projects at specific locations and therefore cannot predict with certainty which impacts will occur and what site-specific mitigation measures are appropriate for second-tier projects. Consequently, the Programmatic EIS/EIR identifies mitigation strategies, approaches tailored to the type of impacts anticipated as a result of CALFED Program projects, which will provide the basis to structure more specific mitigation measures.

For each potentially significant environmental impact, one or more mitigation strategies are identified. These mitigation strategies will be considered as part of second-tier environmental review by any agency proposing to undertake projects that are within the scope of this Programmatic EIS/EIR. Where a second-tier project involves impacts that are addressed in the Programmatic EIS/EIR, the applicable mitigation strategies will be used to formulate site-specific mitigation measures and enforcement programs. The commitment to consider mitigation strategies, and to apply and enforce mitigation measures pursuant to those strategies, will be included in the ROD/CERT. In addition, any state or federal project funded through legislation that provides for projects to be consistent with, or in accord with, the CALFED Program will need to demonstrate compliance with this commitment, as set forth in the Mitigation Monitoring Plan adopted at the time of the ROD/CERT.

NEPA and CEQA are intended to inform decision makers and the public of the environmental consequences of the proposed action, provide an analysis of alternatives, and ensure consideration of mitigation options. The governance, financing (including cost-sharing), and assurance structures do not cause physical changes to the environment or affect the analysis of anticipated impacts, alternatives, or mitigation options. These issues therefore are not analyzed in the programmatic impact analysis document.

As noted previously, second-tier or site-specific environmental documents will be prepared for individual projects, where potentially significant environmental impacts require such analysis. Second-tier documents will be prepared to concentrate on issues specific to the individual project being implemented and site(s) chosen for the action before construction can be initiated.

*Many comments support or oppose only one program element exclusively. For example, many comments stated that water conservation alone is the solution to water management or that all that is needed to achieve CALFED's goals is the Ecosystem Restoration Program.*

**CALFED Program Objectives.** The CALFED Program is a cooperative, inter-agency effort of state and federal agencies with management or regulatory responsibilities for the Bay-Delta region that was formed to address the tangle of complex issues that surrounds the Delta. The CALFED Program was established to reduce conflicts in the system by solving problems in four areas: ecosystem quality, water quality, water supply reliability, and levee and channel integrity.

In the past, most efforts to improve water supply reliability or water quality, improve ecosystem health, or maintain and improve Delta levees were single-purpose projects. A single purpose can keep the scope of a project manageable but ultimately may make the project more difficult to implement. The difficulty occurs because a project with narrow scope may help to solve a single problem but result in impacts on other resources, causing other problems and leading to conflict. Ultimately, no problem is solved; or one problem is solved while others are created.

The CALFED Program takes a different approach, recognizing that many of the problems in the Bay-Delta system are inter-related. Problems in any one problem area cannot be solved effectively without addressing problems in all four areas at once. This approach greatly increases the scope of our efforts but will ultimately enable us to make progress and move forward to a lasting solution.

Significantly, there are many linkages among the objectives in the four problem areas and among the actions that might be taken to achieve these objectives. Solving problems in four areas at once does not require a four-fold increase in the cost or number of actions. Most actions that are taken to meet program

objectives, if carefully developed and implemented, will result in simultaneous improvements in two, three, or even four problem areas.

The CALFED Program is a collaborative effort that includes representatives of agricultural, urban, environmental, fishery, and business groups, as well as local governments and water and irrigation districts, who have contributed to the process. The Bay-Delta Advisory Council (BDAC), a 34-member federally chartered citizens' advisory committee, provides formal comment and advice to the agencies during regularly scheduled public meetings. In addition, the CALFED process has included members of the public in development of every Program component from ecosystem restoration to financing. CALFED has encouraged and solicited members of the public to review and comment on proposals and technical supporting material.

Three fundamental concepts related to the Bay-Delta system and its problems have guided the development of proposed CALFED solutions. These concepts are not new, but CALFED has looked at them in new ways to develop options for solving problems successfully.

First, the four problem areas (ecosystem quality, water quality, water supply reliability, and levee system integrity) are inherently inter-related. CALFED cannot effectively describe problems in one problem area without discussing the other problem areas. It follows that solutions also will be inter-related; many past attempts to improve a single problem area have achieved limited success because solutions were too narrowly focused.

Second, there is great variation in the flow of water through the system and in the demand for that water at any time scale that might be examined (from year to year, between seasons, and even on a daily basis within a single season). The value of water for all uses tends to vary according to its scarcity and timing of need versus supply. This variable leads to the need for an overall water management strategy to address water demand, water supply, and how the value of water can be maximized.

Finally, the solutions must be guided by adaptive management. The Bay-Delta ecosystem is exceedingly complex and is subject to constant change as a result of factors as diverse as global warming and the introduction of exotic species. The CALFED agencies will need to adapt management of the system as we learn from our actions and as conditions change.

While the CALFED Program generally will not rely on new regulations to implement Program objectives, the Program does recognize that existing regulatory programs will continue to be implemented by the CALFED agencies with jurisdiction over these programs. The CALFED Program represents a unique opportunity to provide high-level coordination of these regulatory programs so that regulatory implementation works in furtherance of CALFED Program goals. The CALFED Program specifically defines incentives and voluntary partnerships to implement many individual actions in the Program. Incentives allow stakeholders to participate in CALFED actions that may not have been economical to them without the incentives. Partnerships allow stakeholders and CALFED agencies to leverage their individual resources by teaming on certain actions.

Some regulations, like those contained in the state and federal Endangered Species Acts (ESAs) and Section 404 of the Clean Water Act, must be satisfied by CALFED as the Program is implemented. Many other regulatory actions can be made more effective and constructive as a result of CALFED actions. For example, water quality regulatory agencies are obligated to develop total maximum daily loads (TMDLs) for certain water quality constituents in the Bay-Delta system. CALFED efforts in monitoring and

research will provide valuable information that will assist regulatory agencies in developing these TMDLs. CALFED incentive-based source control actions will help to reduce the load of these and other pollutants. In this way, many ongoing regulatory requirements will be easier to satisfy in the context of the CALFED Program.

## COMMON RESPONSE 2. WATER CONSERVATION

This common response addresses the comments summarized below and describes how the Water Use Efficiency Program is inter-related to the other Program elements.

*Many comments concern water conservation and its role in the CALFED Program. Most comments regarding water conservation urge that water conservation or non-structural solutions be given great consideration in water management in California. Other comments state that other water management methods are not necessary if water conservation or non-structural solutions are carried out, water conservation should be fully implemented before new water management facilities are constructed, better water conservation is needed on farms and in cities, the Program needs to assure strong water conservation programs and economic incentives to conserve water, and various water conservation techniques should be used.*

### Water Use Efficiency Is Important to the Success of the CALFED Program

**Purpose of the Water Use Efficiency Program.** Water conservation is important in the CALFED Program. The Water Use Efficiency Program Plan is one of the cornerstones of CALFED's Water Management Strategy. Water conservation, along with water recycling, is at the core of the Program's Water Use Efficiency Program Plan. The CALFED policy toward water use efficiency reflects the State's strong public emphasis of a water use efficiency and conservation ethic, as well as the legal requirements for reasonable and beneficial use of water—both existing and new water supplies must be used efficiently.

The Water Use Efficiency Program's definition of efficient water use is the implementation of local water management actions that increase the achievement of CALFED goals and objectives. This definition encompasses improvements in water timing, water quality, and in-stream flows and is therefore broader than traditional definitions of physical efficiency.

**Objectives of the Water Use Efficiency Program.** The Water Use Efficiency Program has the following objectives: reduce existing irrecoverable losses, achieve multiple benefits, preserve local flexibility, emphasize incentive-based actions over regulatory actions, build on existing water use efficiency programs, and provide assurance of high water use efficiency.

Types of potential reductions include recovered losses with potential for rerouting flows, potential for recovering currently irrecoverable losses, and potential reduction of application. The Program focuses on opportunities that can be implemented at the local water supplier and end-user level. For example, changing the timing of diversion, reducing demand through conservation and recycling, or improving the quality of a return flow are actions related to beneficial use of local diversions that can be implemented at the local, regional, and end-user levels.

In the past two decades, many agricultural and urban water users have significantly improved their water use efficiency. The Program intends to amplify these gains by further expanding the implementation of water use efficiency measures. To stimulate the implementation of these efficiency measures, the Program will work with local, state, and federal government agencies to provide financial, technical, and planning assistance to water providers and water users. The Program also has recommended reporting mechanisms

and processes to track the implementation of water use efficiency measures and to ensure compliance with water use efficiency targets and objectives.

### **Water Conservation Is the Solution**

**Role of Water Conservation in Solving Water Problems in California.** The CALFED Program's mission is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system, not to solve California's water problems. While water conservation is an important part of any Bay-Delta solution, conservation does not represent a complete and comprehensive solution to all of the problems plaguing the Bay-Delta. Water conservation alone will not adequately address the degraded Bay-Delta ecosystem, declining water quality, a levee system vulnerable to failure, or the uncertainty of water supplies to meet beneficial uses. The Bay-Delta's complex problems demand a more comprehensive solution than water conservation alone provides.

**Use of Non-Structural Solutions Such as Water Use Efficiency, Conservation, and Reclamation Programs, to Stretch Existing Water Supplies Instead of Building New Dams and Canals.** While the Water Use Efficiency Program will help to increase water supply reliability and perhaps reduce the need for or scope of new storage facilities, the program cannot replace the need for new storage facilities.

Water conservation by itself would not allow for reoperation of the Bay-Delta water system in order to achieve multiple benefits. For instance, groundwater or off-stream surface storage south of the Delta could allow the south Delta pumps to divert greater quantities of water from the Delta during times least disruptive to the ecosystem or in-Delta water quality. This stored water would allow the pumps to curtail or cease operations during times when the ecosystem or in-Delta water quality is more sensitive to diversion effects. Water conservation alone also would not provide the level of benefit for aquatic species that storage could through increased seasonal flows upstream of the Delta or through improved water temperature conditions.

Water use efficiency by itself is not enough to improve water quality. The CALFED strategy for improving drinking water quality is to reduce the loads or impacts of bromide, total organic carbon, pathogens, nutrients, salinity, and turbidity through a combination of measures—including storage and conveyance improvements. Surface and groundwater storage along with Delta conveyance improvements can help in managing inflows to and exports from the Delta, which could be used to improve water quality both in the Delta and exported water supplies.

**Water Conservation for Managed Wetlands.** CALFED proposes implementing cost-effective efficiency measures in each water use sector: urban, agricultural, and managed wetlands. Because of inherent institutional differences between sectors, approaches are somewhat different for each sector. The Program's focus on water diverted for environmental uses has been limited mainly to wildlife refuges and wetlands managed by CALFED agencies. Because water is not diverted or applied to other environmental uses as in the urban and agricultural sector, CALFED does not intend to apply efficiency concepts to environmental uses other than managed wetlands. However, CALFED agencies will take direct action to manage water supplies on refuges, rather than an indirect role as for the urban and agricultural sectors. Three CALFED agencies (the California Department of Fish and Game, U.S. Bureau of Reclamation [Reclamation], and U.S. Fish and Wildlife Service) have been working with the Grasslands Resource Conservation District to develop an Interagency Coordinated Program for optimum water use planning



for wetlands of the Central Valley. A task force representing these entities has recommended a program that includes efficient water management practices for refuges and wetland areas of the valley. The task force report is being reviewed by the sponsoring agencies. CALFED's approach to water use efficiency for managed wetlands will hinge on finalizing and implementing the Interagency Coordinated Program.

**Water Conservation for Agriculture.** Improved agricultural water conservation can result from management and technical improvements at both the irrigation district and farm level. The potential benefits of conservation include reductions in diversions, percolation to salt sinks, evapotranspiration, and/or contaminated runoff. As a water management tool, agricultural water conservation can go beyond improving water supply reliability and also can provide water quality and ecosystem quality improvements.

The CALFED agricultural water use efficiency approach is designed to identify water management techniques that increase the effectiveness of water use management and efficiency at the field, farm, district, and basin level where these are appropriate.

The agricultural component of the Water Use Efficiency Program is structured around four broad elements: (1) incentives; (2) a locally tailored program that incorporates the work of the Agricultural Water Management Council (AWMC), a stakeholder agency that was established pursuant to Assembly Bill 3616 and is devoted to agricultural water management; (3) quantifiable objectives; and (4) assurances.

The Water Use Efficiency Program will be implemented by a multi-disciplinary technical team that includes water conservation, water quality, aquatic biology, irrigation engineering and local operations expertise as well as other regional representatives. On a region-by-region basis, the technical team will determine the following components that are consistent with the agricultural water use efficiency objectives, including: targeted benefits, quantifiable objectives, targeted flow path changes, performance indicators, regional implementation strategies, monitoring and performance assessments, and refinement and revision.

### **Role of Urban Water Conservation**

Increasing water use efficiency in urban areas is a fundamental part of the Water Use Efficiency Program. Urban water conservation will provide a direct reduction in total urban demand for water and so is an important component in addressing water supply reliability. Increased water use efficiency also can meet water quality and ecosystem objectives where it reduces pollutant loads or reduces diversions of water.

Urban water suppliers have worked with public and private sector interest groups to create the California Urban Water Conservation Council (CUWCC), a nationally recognized forum for the successful advancement of understanding and implementation of urban water use efficiency measures. Urban areas already have made significant progress toward water use efficiency goals under the 1991 Memorandum of Understanding Regarding Urban Water Conservation in California (Urban MOU).

Improvements in urban water use efficiency could result in reduction of urban per capita use and reduction of existing or projected system losses associated with that use. A large percentage of these reductions could result in a water savings that can be reallocated to meet other water supply demands. Although not all of the reduction generates such savings, reduction in per capita water use could result in benefits to water quality and the ecosystem, and reduced energy needed for water treatment (both potable

processes and wastewater) and home water heating. Potential conservation estimates developed by CALFED are separated into two categories:

- Estimated reduction in total loss (other than the irrecoverable loss portion; most of this reduction is available only to provide water quality and ecosystem benefits, and potentially reduce future demand projections of a particular basin
- Estimated reduction in irrecoverable losses (available to reallocate to other beneficial water supply uses).

Conservation sectors include residential indoor use; urban landscape use; commercial, industrial, and institutional use; and water distribution system loss and leakage.

While making better use of urban water supplies is an important component of CALFED's Water Management Strategy, urban water conservation could result in a long-term negative effect on system flexibility. As more water conservation measures are implemented as part of the normal water use pattern, additional conservation could be more difficult to achieve or more costly, or additional behavioral changes could be required of users to conserve additional water in order to respond to shortages.

A different methodology is applied for each of the urban conservation sectors. These estimates were developed to help understand the potential role of conservation in the larger context of statewide water management, as well as to provide information for the programmatic-level impact analysis. These estimates are not targets or goals and should not be interpreted as such, or used for planning purposes.

CALFED's approach to water recycling is to identify and resolve barriers that have prevented local entities from implementing recycled water projects. The approach to water recycling will include water recycling feasibility planning as part of the urban conservation certification effort. CALFED will help urban water suppliers comply with regulations by assisting local and regional agencies with preparation of water recycling feasibility plans that meet the requirements of the Urban Water Management Planning Act. The CALFED urban certification process proposes additional consequences for inadequate adoption of water use efficiency measures, including monetary fines and water-based sanctions.

### **Assurances and Incentives in the CALFED Water Use Efficiency Program**

Several aspects of the CALFED Program are designed to assure that water use efficiency's full potential to meet CALFED water supply reliability goals is realized. Before water supply benefits from some CALFED actions such as new storage are delivered, a user must show that they have water management plans in place and are in compliance with those plans. Implementation of storage projects also will be predicated on complying with all environmental review and permitting requirements. Finally, Stage 1 includes a significant commitment to fund water use efficiency measures.

Furthermore, CALFED has recognized the need for some incentives as part of the Water Use Efficiency Program. Some potential water use efficiency benefits may not be cost-effective locally but may be so regionally or from a statewide perspective. For one thing, water may be more valuable to an entity outside the immediate local area, and that entity may be willing to fund the efficiency improvement in exchange for transferring the conserved water. Second, water efficiency improvements that also increase water quality could benefit a larger group of water users in the region. Finally, where the water saved through

water use efficiency measures result in increased water dedicated to in-stream or Delta uses on a permanent basis, there may be a public benefit.

### **Assuring Implementation of Water Use Efficiency Measures by Both Agricultural and Urban Water Users**

Assurances play a critical role in the Water Use Efficiency Program. The assurance mechanisms are structured to ensure that urban and agricultural water users and water suppliers implement the appropriate efficiency measures. Assurance of high agricultural water use efficiency will be based on a set of agricultural water use efficiency quantifiable objectives. The quantifiable objectives are currently being developed and will include targeted benefits, measurable indicators, and regional implementation strategies. Assurance of high urban water use efficiency will be based on a certification process that will provide a rigorous peer review of urban implementation of established best management practices (BMPs). As a prerequisite to obtaining some CALFED Program benefits (for example, participating as a buyer or seller in a water transfer; receiving water from a drought water bank; or receiving water made available solely because of supply enhancements such as new, expanded, or reoperated facilities), local water agencies will need to show that they have endorsed or certified water management plans in place and are in compliance with the applicable urban or agricultural council agreements and applicable state law. This requirement will result in careful analysis and implementation of cost-effective conservation measures identified in those agreements.

In addition to an assurance mechanism focused on participation in the Urban MOU, CALFED will work to ensure that more urban suppliers comply with another water planning effort, the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). CALFED will use the work of the agricultural and urban conservation councils (formed under their respective MOU) to contribute to the Water Use Efficiency Program. However, this will not be the extent of the program. The agricultural program will identify and provide grant funding for measures that go beyond those expected from the AWMC.

### **The Need for Incentives for Agricultural and Urban Water Users to Conserve Water**

The Water Use Efficiency Program Plan includes actions to ensure strong water conservation programs and provides economic incentives to cause water conservation implementation. Over the past two decades, agricultural and urban water users have significantly improved their water use efficiency; the Program intends to strengthen water conservation and water recycling programs to achieve greater efficiency. The CALFED Program will extend the progress already made by (1) providing financial and technical support for urban water use efficiency programs; and (2) instituting a process to certify water supplier compliance with the Urban MOU, thus assuring full implementation of cost-effective BMPs. Assurance of high agricultural water use efficiency will be based on a set of agricultural water use efficiency quantifiable objectives.

Diverse stakeholder groups have recognized the importance of, and the need for, appropriate measurement of water deliveries. Measurement will provide better information on statewide and regional water use, will enable water purveyors to charge for water according to the amount used, will allow water users to demonstrate the effects of efficiency measures, and will facilitate a water transfers market. CALFED has initiated a public process to add greater definition to appropriate measurement, by convening an Independent Review Panel on Appropriate Measurement. This panel will provide guidance that will help define appropriate measurement as it relates to surface and groundwater use. The panel will prepare a

consensus definition of appropriate measurement by the end of 2001. At the end of this stakeholder process, CALFED agencies will work with the California State Legislature to develop legislation requiring the appropriate measurement of all water uses in the State of California.

The Water Use Efficiency Program builds on existing water use efficiency programs. Several existing efforts are striving to increase water use efficiency. The CUWCC and AWMC are stakeholder organizations devoted to urban and agricultural water management, respectively. Similarly, CALFED agencies, such as the California Department of Water Resources (DWR), Reclamation, and the Natural Resource Conservation Service, have ongoing water management programs. The State Water Resources Control Board (SWRCB), DWR, and Reclamation also have ongoing water recycling programs. Existing regulatory processes provide necessary assurances of efficient use, as well as mitigation for third-party impacts that may result from incentive-based approaches. CALFED will enhance rather than attempt to recreate the positive momentum established by these existing programs.

The Water Use Efficiency Program will increase the availability of planning assistance, technical assistance, and funding so that more districts can expand their role to include water supply management, not only delivery. The Water Use Efficiency Program Plan discusses ways to more efficiently use water resources by the agricultural, urban, and managed wetland water users. The Water Use Efficiency Program is anticipated to provide the assistance necessary to gain higher levels of efficient water management practice (EWMP) implementation and participation by more agricultural water districts. Incentives, coupled with assurance mechanisms, will encourage more districts to properly examine the benefits of the EWMPs and implement the cost-effective measures. It is assumed that such measures will result in a significant majority of the water suppliers planning, adopting, and implementing feasible, cost-effective efficiency measures.

A key aspect of the Water Use Efficiency Program will be that no water users will have access to CALFED Water Use Efficiency Program benefits without fully implementing their endorsed/certified water management plans. For example, water districts must comply with their applicable water management plan to receive grants under the Water Use Efficiency Program. CALFED will include a more detailed explanation of this linkage between Water Use Efficiency Program benefits and compliance with water management plans in the ROD.

CALFED is also relying on a competitive grant and loan program as the best mechanism to assure cost-effective investments in water use efficiency. Under this program, CALFED investments would be made in the most cost-effective water use efficiency measures first. Due to the regional differences in water use efficiency potential, the exact cost-effective measures will vary; however, CALFED anticipates that the competitive grant and loan program would allow participating districts to effectively respond to local conditions. CALFED investments in water use efficiency are premised on the fact that some water use efficiency measures may not be cost efficient when viewed solely from a local perspective but may be cost effective when viewed from a statewide perspective, when compared to other water supply reliability options. CALFED's proposed grant and loan program will tailor specific grants or loans to reflect this distinction between local benefits and statewide benefits, and will adjust the required local cost-share requirements accordingly.

Local water suppliers will rely on CALFED agencies to provide a high level of technical and financial assistance in order to support increased local conservation and recycling efforts. Adequate funding for assistance programs will be an important assurance for local agencies. CALFED's initial Stage 1 cost estimate for state and federal financial assistance is \$700 million, which may be increased as the program is further refined.

CALFED expects to generate water use efficiency incentives through improvements in the water market and through willing-seller water acquisitions for the Ecosystem Restoration Program to augment in-stream flows. In addition, improvements in water quality under the Water Quality Program can assist in meeting water use efficiency goals, by reducing the need for water to meet soil leaching requirements and by enhancing water reclamation opportunities. Similarly, actions taken under the Water Use Efficiency Program are expected to result in ancillary benefits for other CALFED objectives.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," for information concerning the objectives and purpose of the CALFED Program. Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of the Water Use Efficiency Program and Water Transfer Program. Please see Chapters 5, 6, and 7 in the Programmatic EIS/EIR for discussion of environmental consequences related to these programs. Please consult the Phase II Report and the Implementation Plan for more information about Stage 1 actions. For additional information, please consult the following sections of the Water Use Efficiency Program Plan: Section 2.2.2 for the urban certification process; Section 4.7 for the methodology used to estimate agricultural water conservation potential; Section 5.4 for the methodology used to estimate urban water conservation potential; and Section 6.3.1 for information about in-kind technical and planning services.

### COMMON RESPONSE 3. RESTORATION EFFORTS

This common response addresses comments related to restoration efforts and their role in the CALFED Program.

*Many comments address restoration efforts and their role in the CALFED Program. The majority of the comments support ecosystem restoration goals, with some individuals and groups indicating that the goals do not go far enough to preserve the ecosystem. Other comments focus on the removal of barriers and dams, with Englebright Dam specifically mentioned in numerous comment letters. Many comments, while supporting the Ecosystem Restoration Program, state that the proposed Ecosystem Restoration Program does not go far enough to meet the needs of the ecosystem. Some comments express support for dedication of water to ecosystem restoration purposes.*

Ecosystem restoration is important in the CALFED Program. CALFED first identified four problem areas: ecosystem quality, water supply reliability, water quality, and levee system integrity and then developed strategies to restore ecological health, improve water quality, improve water supply reliability, and ensure levee and channel integrity. CALFED has developed eight programs, or categories of actions, that contribute to carrying out these four strategies. The Ecosystem Restoration Program is one of those eight programs.

The Ecosystem Restoration Program is one of the largest, most comprehensive, and most inclusive environmental restoration program in the United States. It provides a new perspective to restoration science by focusing on the rehabilitation, protection, or restoration of ecological processes that create and maintain habitats needed by fish, wildlife, and plant species dependent on the Delta and its tributary systems. This strategy emphasizes solid science, adaptive management, and local participation—an innovative approach that is becoming a model for similar efforts throughout the nation. By restoring the natural processes that create and maintain diverse and vital habitats, CALFED aims to meet the needs of multiple plant and animal species while reducing the amount of human intervention required to maintain habitats.

*Comments support restoration goals.*

The purpose of the CALFED Program is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. To practically achieve this Program purpose, CALFED must concurrently and comprehensively address problems of the Bay-Delta system within each of four critical resource categories: ecosystem quality, water quality, levee system integrity, and water supply reliability. Important physical, ecological, and socioeconomic linkages exist between the problems and possible solutions in each of these categories. Accordingly, a solution to problems in one resource category cannot be pursued without addressing problems in the other resource categories. Eliminating other portions of the CALFED Program would violate CALFED's mission, goals, objectives, and solution principles.

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*Comments support removing fish barriers and removing existing dams.*

The Ecosystem Restoration Program is actively evaluating opportunities to remove barriers to fish migration. In most cases, this involves removing small diversion dams. We have removed dams on Butte Creek and will soon remove dams on Battle Creek. We are evaluating additional opportunities on Butte Creek, Clear Creek, and Mill Creek. The potential also exists to eliminate the barrier to fish passage presented by Englebright Dam on the Yuba River.

In general, the Ecosystem Restoration Program recommends the following types of actions for fish passage problems at dams and diversions: upgrade existing fish ladder systems to improve fish passage where needed; construct fish ladders, where appropriate, to minimize blockages of upstream migrating anadromous fish behind weirs; provide adequate fish passage, including fish ladders, for small- to moderate-sized diversion dams; and, where feasible and consistent with other uses, reconstruct diversions or remove dams to allow fish passage.

In all instances, projects will be developed in a collaborative manner with participation by all affected and interested individuals; organizations; and local, state, and federal agencies. Each project will be evaluated on its technical and scientific merits and overall cost. Each site-specific action will be required to comply with state and federal law and universally will include the preparation of the appropriate NEPA and CEQA documentation.

For example, in the “Feather River/Sutter Basin Ecological Management Zone” section in Volume 2 of the Ecosystem Restoration Program Plan, it is recommended that a cooperative study be conducted to determine the feasibility of allowing spring-run chinook salmon and steelhead access to historical spawning and rearing habitats above Englebright Dam on the Yuba River. This collaborative study is guided by the Upper Yuba River Work Group, which is comprised of local business and property owners, environmental groups, and state and federal agencies. This project is in the initial study phase to determine its feasibility. Elements to be evaluated include quantity and quality of anadromous fish habitat upstream and downstream of Englebright Dam, economic consequences, effect on downstream flood control, effect on local water supplies, and evaluation of sediment and contaminants within Lake Englebright. The feasibility study phase will determine whether there is a potential project as defined by NEPA/CEQA for future evaluation or whether there is no feasible option to allow the introduction of salmon and steelhead to the Upper Yuba River watershed.

In every case, alternatives will be thoroughly studied. All potentially significant impacts will be evaluated and documented. Appropriate mitigation will be included in the NEPA and CEQA documentation.

*CALFED goals do not go far enough to preserve the ecosystem.*

CALFED has designed a restoration program that will meet its ecosystem goals. Since our understanding of ecosystem is incomplete and subject to change, management planning and programs must be sufficiently flexible to respond to new information. Adaptive management will allow CALFED to begin implementation of the Ecosystem Restoration Program and to make adjustments as necessary to meet its goals. Many independent scientists have reviewed and contributed to development of the Ecosystem Restoration Program Plan.

The Strategic Plan for the Ecosystem Restoration Program signals a fundamental shift in the way the ecological resources of the Bay-Delta ecosystem will be managed, because it embodies an ecosystem-based management approach with its attendant emphasis on adaptive management. Traditional management of ecological resources typically has focused on the needs of individual species. Ecosystem-based management, however, is a more integrated, systems approach that attempts to recover and protect multiple species by restoring or mimicking the natural physical processes that help to create and maintain diverse and healthy habitats.

Ecosystem restoration does not entail recreating any particular historical configuration of the Bay-Delta environment; rather, it means reestablishing a balance in ecosystem structure and function to meet the needs of the plant, animal, and human communities while maintaining or stimulating the region's diverse and vital economy. The broad goal of ecosystem restoration, therefore, is to find patterns of human use and interaction with the natural environment that provide greater overall long-term benefits to society as a whole.

*CALFED should provide water for ecosystem restoration.*

Volume 1 of the Ecosystem Restoration Program Plan includes a section titled "Central Valley Streamflows." In this section, we present the background, the ecological function, the issues and opportunities, and our vision for the restoration of in-streamflows to all of the streams and rivers tributary to the Delta.

There are several mechanisms for additional fresh-water flow through the Delta and Bay. The Central Valley Project Improvement Act (CVPIA) Section 3406(b)(2) water provides for 800,000 acre-feet (800 TAF) of Central Valley Project (CVP) yield for environmental purposes.

In Volume 2 of the Ecosystem Restoration Program Plan, we propose target in-streamflows for each stream or river tributary to the Delta. These targets are organized by ecological management zones. Where sufficient data are available, we are very specific in our targets. Where uncertainty remains, we propose programmatic actions to obtain and analyze the data necessary.

It is estimated that meeting the proposed Central Valley streamflow targets will require as much as 400 TAF of water over and above the existing in-streamflow. In all cases, we intend to obtain this additional water by acquisition from willing sellers or by developing alternative supplies. In addition, the Environmental Water Account (EWA) (see common response 21) will use an average of 380 TAF annually; somewhat higher amounts are anticipated after the first year. Coordination on the use of Ecosystem Restoration Program and Environmental Water Account water will assure multiple use whenever practical.

The Ecosystem Restoration Program will participate in the costs and benefits of water conservation, conjunctive use, groundwater management and development, reoperation of existing facilities, and the yield from new storage.

Water acquired or developed for ecosystem restoration purposes will be protected or guaranteed under California water rights law.



**References to Relevant Provisions in the Programmatic EIS/EIR.** In addition to the documents listed above, please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of the Ecosystem Restoration Program. Please see Chapters 5, 6, and 7 in the Programmatic EIS/EIR for discussion of the environmental consequences related to this program. Please see the Phase II Report and the Implementation Plan for more information about Stage 1 actions.

#### COMMON RESPONSE 4. NEW WATER STORAGE IN THE CALFED PROGRAM

Perhaps more than any other subject, the issue of new water storage generated numerous comments from reviewers. This response describes how new water storage has been considered in the CALFED Program.

*For the most part, comments express strong views either supporting or opposing water storage as part of the Preferred Program Alternative. For example, those comments supporting water storage express concern about meeting water demands for current and future population levels, providing for future agricultural use for food and fiber production, and for protecting water rights. Some comments support surface water storage by stating that past reservoir construction has produced new biological habitat, enhanced fisheries and water quality, and provided more recreational opportunities. Those comments opposing water storage express concern about continued degradation of environmental resources, including free-flowing rivers; other comments opposing water storage focus on investing in water conservation before new water storage facilities are considered and requesting that CALFED commit to not going forward with building new dams during the 7 years of Stage 1.*

**The Role of Water Storage in the CALFED Program.** CALFED's Preferred Program Alternative includes a groundwater and surface water storage component with potential facility locations in the Sacramento and San Joaquin Valleys and in the Delta. New groundwater storage and conjunctive use projects will be implemented under the principle of local management and control. Surface water storage options include development of new off-stream storage reservoirs or expansion of existing storage reservoirs. Development of new on-stream surface water storage reservoirs is not proposed.

The storage component of the Preferred Program Alternative is part of an overall Water Management Strategy. Storage that is properly managed and integrated with other water management tools can be used to improve water supply reliability, provide water for the environment at times when it is needed most, provide important recreational opportunities, provide flows timed to maintain water quality, and protect levees through coordinated operation with existing flood control reservoirs. Not all water management tools provide the same benefits. While water conservation can make water available for other uses, it may not provide supplies at needed times and locations. Water stored in strategically located surface reservoirs or groundwater basins can improve system operational flexibility by providing opportunities to improve the timing and availability of water for all uses. The value of this improved flexibility has been illustrated through CALFED evaluations that have shown that the EWA is most effective when combined with access to storage. All water management tools must be used wisely and efficiently to meet California's water reliability needs.

The benefits and impacts of surface and groundwater storage vary, depending on the location, size, operational policies, and linkage to other Program elements. Surface storage reservoirs and associated facilities would permanently inundate existing agricultural, wetland, riparian, annual grassland, woodland, and forest communities that support a variety of species, including special-status species. Storage facilities could fragment riparian corridors and wildlife use areas, and disrupt historical wildlife movement patterns. Site-specific evaluations of all storage proposals will be completed, and appropriate mitigation will be identified before any storage project is implemented. Potential impacts also are associated with diversion of water into storage facilities. Operation rules for new storage will be developed and implemented to assure that diversions to and releases from new storage maintain the frequency, magnitude, and duration of flows necessary to maintain and restore downstream riparian habitat.

**Storage Evaluation Process.** Early in Phase II of the Bay-Delta Program, CALFED conducted preliminary evaluations to determine an appropriate range of storage volumes to be examined during preparation of the Programmatic EIS/EIR. CALFED approximated the utility of various volumes of new Sacramento River off-stream storage and south-of-Delta off-aqueduct storage in providing water supply benefits for agricultural, urban, or environmental flow purposes. This evaluation considered the availability of flows that might be diverted to storage, a range of diversion capacities, and a variety of potential future water use patterns. Economic and financial issues were not considered in this preliminary evaluation. Based on this preliminary evaluation of potential water supply benefits and practical consideration of acceptable levels of impacts and total costs, the range of total new storage considered in the Programmatic EIS/EIR was set at 0 to 6 million acre-feet (MAF). This range was not comprised of specific surface storage project proposals; rather, generic storage capacity within this range was evaluated to estimate the potential effects on flows, available water supply, water quality, and the ecosystem.

Concurrently, CALFED initiated a surface storage screening process to determine specific projects that might be implemented as part of the CALFED Program. As a start, CALFED compiled an inventory of 52 potential new surface storage projects that have been considered in recent decades. Projects in this inventory were evaluated to determine which sites could most likely provide broad benefits for water supply, flood control, water quality, and the ecosystem. Sites that conflicted with CALFED solution principles, objectives, or policies were eliminated. This initial screening reduced the number of potential surface storage projects under consideration by CALFED to 12. See the Phase II Report for a summary of the locations.

In recent months, state and federal representatives considered existing information on the potential benefits, costs, impacts, and implementability of the 12 remaining potential surface storage projects. The representatives agreed to take the necessary steps to pursue expansion of two existing reservoirs and construction of a new off-stream reservoir, with a total capacity of 950 thousand acre-feet (TAF). These projects include: (1) expanding CVP storage in Shasta Lake by approximately 300 TAF, (2) expanding the Los Vaqueros Reservoir by up to 400 TAF, and (3) implementing an in-Delta storage project with a capacity of approximately 250 TAF. CALFED also will pursue a major expansion of locally managed and controlled groundwater storage for an additional 500 TAF to 1 MAF of water supply. In addition, CALFED will study two potential reservoir locations through partnerships with local agencies: (1) Sites Reservoir, with a capacity of up to 1.9 MAF; and (2) additional storage in the upper San Joaquin River watershed with capacity of 250-700 TAF. However, these two projects will require substantial technical work and further environmental review and development of cost-sharing agreements before decisions to pursue them as part of the CALFED Program. The remaining potential reservoir sites in CALFED's screened list of 12 sites, as well as those sites previously screened out earlier during the site review process, appear to have less potential for providing benefits during Stage 1 or soon thereafter, either because of cost, extensive planning and analysis required, or other factors.

CALFED will continue site-specific feasibility studies and initiate site-specific environmental review processes for these projects, as appropriate. These studies will be coordinated under CALFED's Integrated Storage Investigation. These investigations will provide information to help update CALFED's Water Management Strategy as CALFED moves into Program implementation. Throughout implementation, the Water Management Strategy will serve as a framework for determining appropriate levels of investment in a variety of water management tools for attaining CALFED's water supply reliability goals and objectives.

**Environmental Water Account.** CALFED's proposed EWA is a good example of how to provide fisheries protection and recovery while providing ancillary benefits for water quality and water supply reliability to help achieve CALFED's overall water management goals. The EWA is based on the concept that flexible management of water could achieve fishery and ecosystem benefits more efficiently than a completely prescriptive regulatory approach. By managing EWA "assets" on a real-time basis, the overall cost of environmental protection can be lower than under a purely prescriptive approach. EWA evaluations show the value and need for storage to make the account work. This approach would help to attain water supply reliability objectives for other water users. In addition, by managing the EWA in close coordination with other parts of the Water Management Strategy, multiple benefits can be achieved from the use of EWA assets. For example, the EWA could time water releases to achieve both fishery enhancement and water quality benefits.

The importance of a successful EWA to the overall CALFED Water Management Strategy cannot be overemphasized. Further, Delta improvements may be difficult to implement given the many regulatory permit programs that protect environmental resources. CALFED intends to develop the specific details of an EWA in the immediate future, so that this Water Management Strategy can be operational at the beginning of Stage 1.

See common response 21 for more information about the EWA.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of the Storage element of the Preferred Program Alternative. Please consult Chapters 5, 6, and 7 in the Programmatic EIS/EIR for discussion of environmental consequences related to the Storage element. See Chapter 8 in the Programmatic EIS/EIR, "Compliance with Applicable Laws, Policies, and Plans and Regulatory Framework." Please see the Phase II Report and the Implementation Plan for more information about Stage 1 actions.

## COMMON RESPONSE 5. ALTERNATIVES

This common response addresses comments concerning alternatives and explains how the Programmatic EIS/EIR complies with relevant NEPA and CEQA requirements pertaining to the identification and assessment of Program alternatives.

*Several comments questioned whether the CALFED Program has considered an adequate range of alternatives. Some comments stated that the CALFED Program should develop new alternatives. For example, there were recommendations that CALFED develop an alternative that would avoid impacts to agricultural lands by minimizing the creation of new fish and wildlife habitat, an alternative that would improve water supply reliability solely through increased water use efficiency, and an alternative that would achieve water quality objectives by capping or reducing exports from the Delta. Some comments questioned whether any of the CALFED Program alternatives would achieve water quality objectives or would improve water supply reliability. And other comments questioned the selection of the Preferred Program Alternative.*

*The CALFED Program has not considered an adequate range of alternatives.*

**The Purpose of the CALFED Program.** To understand the range of alternatives considered, it is important to bear in mind the purpose of the CALFED Program. In the past two decades, disagreements regarding the use and management of the Delta have increasingly taken the form of protracted litigation and legislative battles. These disagreements have not yielded solutions to the water-related conflicts centering in the Delta. The CALFED Program was established to reduce these conflicts and provide a solution that competing interests could support. Specifically, the mission of the CALFED Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. The CALFED Program evaluated a wide range of alternatives to determine the best way to fulfill this mission. Because both of the purposes composing the CALFED mission are essential to the success of the CALFED Program, only alternatives that would both restore ecological health and improve water management for beneficial uses of the Bay-Delta system were carried forward for detailed consideration. Each alternative (other than the No Action Alternative) considered in detail in the Programmatic EIS/EIR would achieve both of these purposes.

**CALFED's Objectives and Solution Principles.** To determine the best way to fulfill its mission, CALFED undertook to address the problems of the Bay-Delta system concurrently and comprehensively within each of four resource categories: ecosystem quality, water quality, water supply reliability, and levee system integrity. CALFED's primary objectives are identified below.

- **Ecosystem Quality.** Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species.
- **Water Supply.** Reduce the mismatch between Bay-Delta water supplies and the current and projected beneficial uses dependent on the Bay-Delta system.
- **Water Quality.** Provide good water quality for all beneficial uses.

- **Vulnerability of Delta Functions.** Reduce the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic breaching of Delta levees.

The problems and possible solutions in each of these categories are linked physically, ecologically, and socioeconomically. In the past, most efforts to improve water supply reliability or water quality, improve ecosystem health, or maintain and improve Delta levees focused on a single resource category. A project that focuses on a single problem within the Delta may be more manageable but is likely to have only limited success. Projects designed to solve a problem within one resource category often do so by expending or harming resources in other resource categories. For example, projects to improve water supply reliability may degrade ecosystem health and vice versa. The solution to a problem in one resource category may thus exacerbate problems in others. When this happens, conflicts regarding the use and management of resources within the Delta are not reduced and may actually be intensified. Consequently, independent, narrowly focused projects have been ineffective in addressing conflicts in the Delta.

The CALFED Program took a broader approach. To acknowledge clearly that the problems in the four resource categories within the Bay-Delta system are inter-related and should be addressed concurrently and comprehensively, CALFED developed six solution principles in consultation with cooperating agencies, stakeholders, and interested public members. The solution principles are identified below.

- **Reduce Conflicts in the System.** Solutions will reduce major conflicts among beneficial uses of water.
- **Be Equitable.** Solutions will focus on solving problems in all problem areas. Improvement for some problems will not be made without corresponding improvements for other problems.
- **Be Affordable.** Solutions will be implementable and maintainable within the foreseeable resources of the Program and stakeholders.
- **Be Durable.** Solutions will have political and economic staying power and will sustain the resources they were designed to protect and enhance.
- **Be Implementable.** Solutions will have broad public acceptance and legal feasibility, and will be timely and relatively simple to implement compared with other alternatives.
- **Pose No Significant Redirected Impacts.** Solutions will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in their entirety, within the Bay-Delta or to other regions of California.

The CALFED mission, the primary objectives, and these solution principles were used to measure the overall acceptability of alternatives for detailed consideration in the Programmatic EIS/EIR.

**Development, Review, and Refinement of Alternatives.** In Phase I, CALFED initiated a lengthy, inclusive, public process to develop alternatives to accomplish its mission. The Phase I process developed alternatives in six steps: identify problems, define objectives, identify actions, develop solution strategies, assemble alternatives, and refine alternatives. Early in Phase I, the Program identified 50 categories of actions to resolve Bay-Delta problems and achieve Program objectives. These action

categories were drawn from existing literature and participation from CALFED agencies, the BDAC, and numerous workshops with stakeholders and the general public. Within these categories, hundreds of individual actions were defined. The action categories represent the building blocks of the alternatives—that is, each alternative is a combination of action categories reflecting differing approaches to achieving Program objectives and addressing solution principles.

Given the large number of categories and the range of perspectives on solutions to Bay-Delta problems among stakeholders and CALFED agencies, thousands of potential alternatives could have been identified. A first step for the Program was to devise a methodology that would keep the number of alternatives to a manageable level while still representing the full range of approaches to resolving problems.

The methodology chosen to accomplish this was to define the critical conflicts that exist between beneficial uses and resources in the Bay-Delta and then to define approaches to resolving these conflicts. The conflicts that were identified are listed below.

- **Fisheries and Diversions.** The conflict between fisheries and diversions results primarily from fish mortality attributable to water diversions. This includes direct loss at pumps, reduced survival when young fish are drawn out of river channels into the Delta, and reduced spawning success of adults when migratory cues are altered. The effects of diversions on species of special concern have resulted in regulations that restrict the quantities and timing of diversions.
- **Habitat and Land Use and Flood Protection.** Habitat to support various life stages of aquatic and terrestrial biota in the Bay-Delta has been lost because of land development and construction of flood control facilities to protect developed land. The need for habitat affects land development planning as well as levee maintenance and planning. Efforts to restore the balance often require that land used for agricultural production be dedicated to habitat.
- **Water Supply Availability and Beneficial Uses.** As water use and competition for water have increased during the past several decades, conflict also has increased among users. A major part of this conflict is between the volume of in-stream water needs and out-of-stream water needs, and the timing of those needs within the hydrologic cycle.
- **Water Quality and Land Use.** Water quality can be negatively affected by land use, and ecosystem water quality needs are not always compatible with urban and agricultural water quality needs.

In assessing these conflicts, alternative approaches to conflict resolution and alternative levels of resolution were defined. Approaches for resolving the fisheries and diversions conflict included a fish productivity approach and a diversion modification approach. Approaches for resolving the habitat and land use and flood protection conflict included an existing land use pattern approach and a modified land use pattern approach. Approaches for resolving the water supply availability and beneficial uses conflict included a demand reduction approach and a supply enhancement approach. Approaches for resolving the water quality and land use conflict included managing the quality of Delta inflows and managing in-stream water quality after discharges had occurred. Within each of these approaches, levels of conflict resolution ranging from less intensive to more intensive were identified.

This process produced 32 separate approaches to resolving the four conflicts. At this point, four teams of experts representing a variety of technical disciplines were formed—one team for each conflict area. These teams then were assigned an equal number of the 32 approaches (8 apiece), and directed to develop approximately three preliminary solution alternatives—sets of actions and action categories—for each of the 8 approaches.

This procedure identified 100 preliminary solution alternatives that subsequently served as the foundation for the refinement process that defined the short list of three basic alternatives to be included in the Phase II analysis. In the Program's judgment, these 100 solution alternatives were representative of the larger number of possible combinations of alternatives and bracketed the range of possible solutions to the four conflicts and, therefore, to the key problems facing the Bay-Delta. These "prototypical" alternatives helped to demonstrate the advantages and disadvantages of a wider range of alternatives. In addition, the six previously mentioned solution principles guided the development of alternatives.

The 100 preliminary alternatives were very broad by design. Moreover, they tended to address the four critical conflicts in varying degrees—that is, they were not necessarily balanced in addressing Program objectives and solution principles.

At this point in the process, leadership responsibility for the four teams was moved from the technical experts to Program staff. This change was made to take advantage of staff's specific expertise on Bay-Delta issues and to more systematically include Program team members in the process, in order to ensure maximum sensitivity to the policies and positions of the CALFED agencies and stakeholder groups. The Program teams were instructed to begin balancing their alternatives, and to refine the initial set to approximately 6 to 10 per area by combining those alternatives with similar characteristics. This process produced a refined list of 31 alternatives.

Continued consolidation and balancing of the alternatives brought the number of alternatives to 20. These 20 alternatives were presented at a workshop to stakeholders, BDAC members, and the public. Consolidation and refinement based on input from that workshop produced the 10 alternatives described in the Program's April 1996 Phase I Progress Report.

The makeup of the alternatives during the process of refinement and development used different combinations of water management tools and varied in the level of effort applied to actions related to water use efficiency, water quality, ecosystem quality, and levee system vulnerability components. Levels of effort characterized as modest, moderate, or extensive were applied to these four components. The two components that included distinctly different approaches were Delta conveyance and water storage. For example, one alternative (Alternative A) contained modest efforts in Bay and Delta habitat restoration and water pollutant source control; moderate efforts in system stabilization; and extensive conjunctive use and groundwater storage efforts. This alternative included an in-Delta surface storage component but no isolated conveyance component. Another alternative (Alternative J) contained extensive efforts in Bay and Delta habitat restoration and water pollutant source control; modest efforts in system stabilization; and moderate conjunctive use and groundwater storage efforts. This alternative contained a large isolated conveyance component but no surface storage component.

During April and May 1996, the Program conducted 9 public meetings around the state, a workshop in Sacramento, and a meeting of the BDAC to discuss the 10 alternatives.



The comments received at the meetings and workshop cover a wide range of technical, policy, and financial concerns. Oral comments were generally consistent with comments contained in the over 160 letters received by the Program. Some of the comments prompted consideration of modifying the structure and presentation of the alternatives, and are identified below.

*The best possible source water quality is of paramount importance to urban water supplies.* Agencies that deliver drinking water are very concerned about the cost of meeting future drinking water quality standards, as well as the technical challenges associated with treating source water of degraded quality. This concern suggests strong pollutant source control measures in every alternative.

*Delta levees will be needed to protect agriculture, infrastructure, and habitat no matter how water is conveyed in the Delta.* Delta levees protect many values, including farms, habitat, infrastructure, and Delta water quality. Even if a new conveyance facility is built that protects water quality for some export users, adequate levee integrity will still be required to protect water quality and many other values in the Delta. This concern argues for a similar level of Delta levee protection in each alternative.

*Ecosystem actions at the modest and perhaps the moderate level appear inadequate; the Program needs a single coherent vision of ecosystem restoration.* The restoration of ecosystem functions and the recovery of Bay-Delta species likely will require diverse actions that will be extensive in scope. There is really no alternative to a single comprehensive plan for restoring ecosystem health. Adaptive management will be vital in guiding efforts to improve ecosystem quality. It is this adaptive management that will provide the needed flexibility in the Ecosystem Restoration Program.

*Water use efficiency must be strongly pursued in all the alternatives.* This concern suggests that water use efficiency measures should be implemented at an increased level among all the alternatives, where previously some alternatives included efficiency at modest or moderate levels.

The next activity for the Program included additional refinement of alternatives, leading to selection of a set of Phase II alternatives that is large enough to offer a reasonable range of solutions while small enough to allow for analysis. Application of the solution principles to the 10 draft alternatives contributed to alternative refinement and consideration.

The refinement and consolidation of the 10 alternatives proceeded according to these steps:

1. Review how each alternative satisfies the Program's mission statement and primary objectives.
2. Review comments from CALFED, the BDAC, scoping meetings, workshops, stakeholders, and the public on each alternative.
3. Evaluate and document how well each alternative satisfies each solution principle.
4. Determine potential ways to modify each alternative to improve any "low" solution principle ratings.
5. Verify that the alternative, if revised, would still meet the primary objectives and the other solution principles.

6. Review the alternatives and potential modifications to identify improved alternatives.
7. Merge similar improved alternatives into a single alternative.

Staff from CALFED agencies and the Program team evaluated alternatives against solution principles. As the detailed solution principles were applied to the 10 alternatives, and modifications were devised to improve “low” solution principle ratings, a pattern emerged. The results confirmed that the set of Phase II alternatives could be defined by combining the four common programs with the two variable components (storage and conveyance).

The above comments and the evaluation of alternatives against the solution principles supported the conclusion that water use efficiency, water quality, levee system integrity, and ecosystem quality were necessary in each of the alternatives to achieve the Program’s purpose—and needed to be composed of the same actions in all alternatives. Although the goal is to implement each of these programs at the highest level to effectively achieve the Program’s purpose, the programs will be implemented incrementally, or in stages, over time. This approach will provide flexibility for monitoring and adapting actions in response to the results of the initial actions.

Based on this information, the fundamental structure of the alternatives was simplified. At the end of Phase I, three basic alternative approaches were formed around different configurations of Delta conveyance: (1) existing system conveyance; (2) modified through-Delta conveyance; and (3) dual-Delta conveyance, which is formed around a combination of modified Delta channels and a new canal or pipeline connecting the Sacramento River in the north Delta to the SWP and CVP export facilities in the south Delta. Each alternative included the same set of four programs that are common to all alternatives and involve water use efficiency, water quality, levee system integrity, and ecosystem quality. A range of storage options for each alternative has been evaluated to support these programs and the Delta conveyance, and to seek a balance between attainment of Program objectives and cost effectiveness. Phase I thus identified four essential common program elements and two variable Program elements, storage and conveyance, that composed the Program alternatives.

**Identification of the Proposed Preferred Program Alternative.** The three basic alternative approaches from Phase I were carried into Phase II. A number of tasks were undertaken during Phase II to further refine the alternatives. Two Program elements were added (Water Transfer evolved as an outgrowth of the Water Use Efficiency Program, and Watershed arose from the Water Quality Program) to each alternative because of their value in helping the Program meet its multiple objectives. Eight program elements thus were considered during Phase II: six common elements (water use efficiency, water quality, levee system integrity, ecosystem quality, water transfers, and watershed management) and two variable program elements (storage and conveyance).

Seventeen variations of the three basic alternative approaches were then developed to further explore potential refinements for the two variable program elements, storage and conveyance. These included three variations for Alternative 1, four variations for Alternative 2, and five variations for Alternative 3. Five variations were eliminated from further consideration due to technical and other considerations. The narrowing process primarily focused on technical deficiencies and the conveyance options used in each alternative. Additionally, if alternatives provided the same conveyance function with similar impacts, the less expensive alternatives were retained. Alternatives with lower costs but higher adverse impacts were eliminated. The impacts of the 12 remaining variations were evaluated in the March 1998 Draft Programmatic EIS/EIR.

Looking simultaneously at all the information on how well the alternatives meet the objectives and how well they satisfy the solution principles would be nearly impossible due to the large amount of information. On the other hand, some aspects differ among the alternatives. These aspects, or distinguishing characteristics, guided the selection of the Preferred Program Alternative. The 18 distinguishing characteristics are: in-Delta water quality, export water quality, diversion effects on fisheries, Delta flow circulation, storage and release of water, water supply opportunities, water transfer opportunities, operational flexibility, south Delta access to water, risk to export water supplies, total cost, assurances difficulty, habitat impacts, land use changes, socioeconomic impacts, consistency with solution principles, ability to phase facilities, and brackish water habitat.

The Preferred Program Alternative process began by examining how each of the 12 alternative variations performed when measured against the 18 distinguishing characteristics. (For additional discussion of the process of developing the Preferred Program Alternative, see the March 1998 Phase II Interim Report.) This assessment revealed the comparative technical advantages of each alternative.

In the assessment, two key distinguishing characteristics were particularly important in identifying how well the alternatives perform. Export water quality and diversion effects on fisheries are highly dependent on the alternative selected. Therefore, irrespective of whether these two characteristics are the most important to selection of the Preferred Program Alternative, they are the characteristics most dependent on that decision.

Some of the 12 variations were eliminated or consolidated. Technical reasons for elimination included possible creation of conditions potentially damaging to the aquatic environment and the lack of a south-Delta conveyance improvements component. The Program has determined that the goals cannot be met without some south Delta conveyance improvements. The Program also determined that a broad range of water management options, including storage, must be evaluated and implemented to achieve the Program's goals. Therefore, each alternative was evaluated as including a range of storage from 0 to 6 MAF, making it possible to consolidate some of the variations into three basic alternative approaches. Public comments on the March 1998 Draft Programmatic EIS/EIR were used to redefine the three basic alternative approaches and develop a Preferred Program Alternative for evaluation in this report.

Initially, the dual-Delta conveyance with an isolated facility appeared to provide greater technical performance than the other alternatives. Some of the scientific and engineering evidence suggests that a dual-Delta conveyance configuration may improve export water quality and achieve fish recovery most effectively. However, other evidence indicates that such a conveyance configuration can cause in-Delta water quality problems. In addition, during scoping and public meetings, some stakeholders and agencies voiced concern that moving water around the Delta instead of through it may:

- Cause difficulty in ensuring the appropriate operation of such a facility.
- Create impacts from construction.
- Increase the amount of land needed for the facility.
- Provide an engineered solution when non-structural modifications and reoperation of existing facilities may provide similar benefits.

For all of these reasons, the strategy of the CALFED Program is initially to select a through-Delta conveyance based on the existing Delta configuration with some channel modifications.

The through-Delta conveyance approach is not without its own concerns. Specifically, there is concern that a through-Delta conveyance approach may not meet future water quality objectives and may adversely affect the recovery of threatened and endangered fish species. Accordingly, if the Program purposes cannot be fully achieved with the proposed through-Delta conveyance, additional actions—including an isolated conveyance facility—may need to be added in the future. Before such a facility is constructed, it must be demonstrated to be the most cost effective and least environmentally damaging alternative, and necessary to fulfill CALFED's commitment to provide good water quality for all beneficial uses.

The way the alternatives are structured, going forward with the through-Delta conveyance does not preclude the Program's ability to undertake additional conveyance actions in the future, subject to appropriate environmental review.

No long-term plan for management of a system as complex as the Bay-Delta can predict exactly how the system will respond to our efforts, or foresee events such as earthquakes, climate change, or the introduction of new species to the system. Adaptive management acknowledges that we will need to adapt the actions that we take to restore ecological health and improve water management. These adaptations will be necessary as conditions change and as we learn more about the system and how it responds to our efforts. Pursuit of the Program's objectives will continue, but our actions may be adjusted over time to assure that the solution is durable. In essence, adaptive management calls for designing and monitoring actions such that they improve the understanding of the system while at the same time improving the system itself. Adaptive management is an essential part of implementing every CALFED Program element.

Staged implementation is central to the adaptive management process. The complexity of the interaction between the various elements of the CALFED Program contributes to the need for staged implementation. Staged implementation involves identifying certain actions for implementation for which there is general agreement and justification, and also identifying actions where uncertainty exists and developing conditions for moving beyond Stage 1. For the Program actions where uncertainty exists, certain predefined conditions would need to be met before action could proceed. The decision to proceed will be guided by a carefully crafted set of pre-defined conditions. Conditional decisions determine how the Program moves from stage to stage as more information on which to base these decisions is developed. "Conditional decisions" on several Program elements may be required at each stage of implementation. See Chapter 2 in the Programmatic EIS/EIR for a description of the Preferred Program Alternative.

**CEQA/NEPA Requirements.** Both CEQA and NEPA require a lead agency to consider a range of potentially feasible alternatives to a proposed action. (40 CFR Section 1502.14[a]; 14 CCR 15126.6.) Under both laws, the selection of alternatives is governed by a "rule of reason." (*Carmel-by-the-Sea v. United States Department of Transportation*, 123 F.3d 1142, 1155 [9th Cir. 1997]; 14 CCR 15126.6[f].) As explained in the CEQA Guidelines,

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only

the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making. 14CCR15126.6(f)

Similarly, under NEPA, “[An] Environmental Impact Statement need not consider an infinite range of alternatives, only reasonable or feasible ones” (*Carmel*, 123 F.3d at 1155). Neither CEQA nor NEPA requires the consideration of alternatives that are incompatible with the fundamental objectives of the project (*Save San Francisco Bay Ass’n v. San Francisco Bay Conserv. & Dev. Comm’n* 10 Cal.App. 4th 908, 919 [1992]; *National Wildlife Federation v. F.E.R.C.* 912 F.2d 1471, 1484-85 [D.C. Cir. 1990].), or alternatives that would change the basic nature of the project (*Marin Mun. Water Dist. V. KGLand Cal. Corp.* 235 Cal. App. 3d 1652 [1991]; *Trout Unlimited v. Morton* 509 F.2d 1276, 1285-86 [9th Cir. 1974]). And neither CEQA nor NEPA requires the consideration of alternatives that are infeasible (*Citizens of Goleta Valley v. Board of Supervisors* 52 Cal. 3d 553 [1990]; *Save San Francisco Bay* 10 Cal. App. 4th at 922; *Vt. Yankee Nuclear Power v. Natural Res. D. C.* 98 S.Ct. 1197, 1215 [1978]).

As explained above, CALFED considered an extensive range of alternatives that reflect a broad spectrum of views about how to achieve the purposes of the CALFED Program. The alternative development process included participants from a wide range of viewpoints and extensive public involvement. In this open process, CALFED defined the Program’s mission and the primary objectives essential to the Program’s mission; developed dozens of potential alternatives; refined the list of potential alternatives by identifying the best alternatives and combinations of alternatives; selected a wide range of potentially feasible alternatives; rejected alternatives that did not satisfy the Program purpose, such as meeting only some of the primary objectives; and incorporated into the Preferred Program Alternative the means for reevaluating and adapting actions carried out as part of the CALFED Program. This process fostered meaningful public participation in the development of alternatives and allowed for informed decision making in the refinement of the alternatives. The alternatives considered in the Programmatic EIS/EIR represent a reasonable range of alternatives that will permit a reasoned choice by the CALFED agencies.

*Many comments suggest alternatives, or suggest that CALFED develop unspecified new alternatives that focus on one primary objective or would disregard or de-emphasize one or more primary objectives.*

These alternatives are not consistent with the purpose of the CALFED Program. Alternatives that would not achieve the primary objectives of the CALFED program for ecosystem quality, water supply, water quality, and vulnerability of Delta functions would not fulfill the CALFED mission and are not required for the consideration of a “reasonable range of alternatives” under CEQA or NEPA.

CALFED’s primary objectives are the criteria for its success in fulfilling its mission—they define the indispensable goals of the CALFED Program. CEQA and NEPA require detailed consideration only of CALFED Program alternatives that would achieve these essential objectives. An environmentally superior alternative cannot be rejected because it does not meet all CALFED Program objectives. However, an alternative that would not fulfill the CALFED mission, or would not achieve the primary objectives of the CALFED Program, is incompatible with the purpose of the Program and need not be considered in detail. Alternatives that would improve water management for beneficial uses of the Bay-Delta system but would not restore the ecological health of the Bay-Delta system, and vice versa, are not reasonable given the purpose of the CALFED Program.

*Some comments suggest that the Program alternatives are unreasonable because they are similar to one another in many important respects.*

The fact that the Program alternatives (other than the No Action Alternative) consist of six common Program elements and only two variable Program elements does not mean that the list of alternatives is not sufficiently long or varied. The common Program elements reflect CALFED's comprehensive approach to resolving the inter-related problems in the Delta; they do not reflect a narrow focus in the selection of alternatives. As described above, the common program elements were distilled from a wide range of potential alternatives. Following extensive scoping, public comment, and agency review, the CALFED agencies concluded that each Program alternative must include a significant core set of Program elements and that these elements must be the same for each alternative. A variable approach to resolving the resource conflicts within the Delta was not tenable, given the need for a comprehensive resolution of the conflicts. These core elements are the six common Program elements. The two elements about which there was less certainty and agreement, storage and conveyance, became the two variable Program elements that define the differences in the alternatives. The development of alternatives based on the six common Program elements and the two variable Program elements is appropriate in light of the extensive and open process used to develop the common Program elements and the unique purpose and nature of the CALFED Program. Neither CEQA nor NEPA requires a lead agency to contrive variations in project alternatives where a wide variation is unnecessary for informed, reasoned decision-making.

*Some comments suggest that an alternative be examined that would avoid impacts on agricultural lands by minimizing the creation of new fish and wildlife habitat.*

One of the two fundamental purposes of the CALFED Program is to develop a long-term comprehensive plan that will restore ecological health to the Bay-Delta system. A primary objective of the CALFED Program is to improve and increase aquatic and terrestrial habitats and to improve ecological functions in the Bay-Delta in order to support sustainable populations of diverse and valuable plant and animal species. The CALFED objectives that were developed to meet this primary objective are described in Section 1.2 in the Programmatic EIS/EIR. Among these objectives are to increase the amount of shallow riverine, shaded riverine, tidal slough, and estuary entrapment and null zone habitats for aquatic species; to increase the amount of brackish tidal marsh, fresh-water marsh, riparian woodland, waterfowl breeding habitat, wintering range for wildlife, managed permanent pasture and floodplains, and associated riparian habitats for wildlife species; and to contribute to the recovery of threatened and endangered species and species of special concern. These objectives and the alternatives designed to meet these and other CALFED Program objectives are based on the alternatives and Program goals developed during Phase I.

As described above, Phase I comprised a six-step process involving the CALFED agencies, other public agencies, and the BDAC that included numerous workshops with stakeholders and the general public. In Phase I, 100 preliminary alternatives were evaluated. From the 100 preliminary alternatives, teams of technical experts representing each of four critical conflict areas (fisheries and diversions, habitat and land use and flood protection, water supply availability and beneficial uses, and water quality and land use) produced a refined list of 31 alternatives. Among these alternatives were minimal and moderate ecosystem restoration actions with a greatly reduced potential to cause significant effects on agricultural lands. Following six public workshops and eight public CEQA/NEPA scoping meetings, and based on input from the BDAC and the CALFED agencies, CALFED concluded that these actions would not achieve the basic CALFED Program objective of restoring ecological health to the Bay-Delta system. CALFED was impelled to this conclusion largely by the fact that a substantial amount of habitat needed to support

various life stages of aquatic and terrestrial biota in the Bay-Delta system has been lost due to land development for urban and agricultural uses and construction of flood control facilities to protect developed land. The CALFED Program objectives necessarily emphasize the improvement of habitats and ecological functions.

In many instances, Program objectives to increase the amount of certain habitat types can be achieved by enhancing existing natural lands or public lands. In addition, Section 7.1.11 in the Programmatic EIS/EIR contains 23 mitigation strategies to avoid or minimize Program effects on agricultural lands. However, because most land within the Bay-Delta system is currently used for agricultural purposes and because some agricultural lands are located in areas critical to ecosystem recovery, the CALFED Program cannot be successful without some conversion of agricultural lands to meet Program objectives. Alternatives that involve little habitat restoration and, therefore, little conversion of agricultural lands were considered and rejected as ineffective in Phase I. In short, alternatives that avoid effects on agriculture are not included in the Programmatic EIS/EIR for detailed consideration, and are not required by CEQA or NEPA because they would not meet a primary objective of the CALFED Program.

*Some comments suggest that an alternative be examined that would improve water supply reliability solely through increased water use efficiency, or would achieve water quality objectives by capping or reducing exports from the Delta.*

One of the fundamental purposes of the CALFED Program is to improve water management for beneficial uses of the Bay-Delta system. A primary objective of the CALFED Program is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. The CALFED objectives that were developed to meet this primary objective are described in Section 1.2 in the Programmatic EIS/EIR. Among these objectives are to improve export water supplies to help meet beneficial use needs and to improve the adequacy of Bay-Delta water to meet Delta outflow needs. These objectives and the alternatives designed to meet these and other CALFED Program objectives are based on the alternatives and Program goals developed during Phase I. Among these were alternatives that emphasized water use efficiency and de-emphasized or eliminated actions to improve export water supplies and improve the adequacy of Bay-Delta water to meet Delta outflow needs. Based on input from public workshops, scoping meetings, the BDAC, and the CALFED agencies, CALFED concluded that these actions would not achieve the primary objective for water supply reliability. Water use efficiency is an important element of the CALFED Program. (See the Water Use Efficiency Program Plan.) However, water use efficiency alone will not suffice to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. Similarly, an alternative that would achieve water quality objectives by reducing or capping exports would prevent the CALFED Program from achieving its objectives regarding water supply reliability.

*Comments support achieving water quality improvements.*

Improving and protecting water quality is very important in the CALFED Program and is addressed in detail in the Water Quality Program Plan. The primary water quality objective of the Program is to “[p]rovide good water quality for all beneficial uses.” Among the four CALFED Program objectives, problems and solutions related to water quality are perhaps the most varied. Good water quality means different things to different users, and there are different ways to achieve the objective. Some constituents

are of great concern to some water users but of no concern for other users. For example, organic carbon from Delta soils can form carcinogenic treatment by-products in drinking water, but this carbon does not generally pose problems for ecosystem quality.

CALFED is committed to improving and protecting the water quality of the Bay-Delta estuary. The Program's goals are two-fold: minimize ecological, drinking water and other water quality problems; and maintain water quality once achieved. Water quality improvements accomplished to meet these goals also may result in ancillary benefits for other beneficial water uses, such as agricultural water use. For example, as cleaner water with fewer contaminants becomes available through the Water Quality Program, growers will have opportunities to be more flexible in their plantings and to grow higher value crops. The Watershed Program would assist in making adequate, high-quality water available to farmers and may provide higher grazing productivity.

The Program's strategy to achieve the water quality objective is to improve and protect source water quality by reducing or eliminating parameters that degrade water quality. The Program's water quality sub-objectives concentrate on this direct source control approach. At the same time, the Program acknowledges that source control alone may not be the best or only strategy to achieve good water quality for all uses.

The CALFED drinking water objective is to improve source water quality in order to allow municipal water suppliers to deliver safe, reliable, and affordable water that meets and, where feasible, exceeds applicable drinking water standards. The CALFED strategy for improving drinking water quality is to reduce the loads or impacts of bromide, total organic carbon (TOC), pathogens, nutrients, salinity, and turbidity through a combination of measures that include source reduction, alternative water sources, treatment, and storage and conveyance improvements.

Water quality improvement is a key element of the ecosystem restoration strategy. CALFED's environmental water quality goal is to provide water in the Bay-Delta of sufficient quality to protect all ecological beneficial uses of the water. Water use efficiency measures can improve the quality of water entering the Delta by reducing some agricultural and nonagricultural discharges that contain pollutants. Water quality can affect the ability to expand water use efficiency measures such as conservation, water recycling, and conjunctive use. These measures depend on the availability of high quality water to prevent salt damage of irrigated land or groundwater basins, prevent corrosion of industrial equipment, and to achieve blended water salinity objectives. CALFED has developed a Watershed Program that has strong linkages to the water quality improvement strategy. The Watershed Program would assist in improving water quality in the Bay-Delta system by helping to identify and control non-point sources of pollution and identify and implement methods to control or treat contaminants in the upper watersheds. Surface and groundwater storage along with Delta conveyance improvements can help in the management of inflows to and exports from the Delta. These improvements could be used to improve drinking water quality. However, water quality improvements are possible only when dedicating system flexibility to this objective. The Integrated Storage Investigation will include more refinement and analysis of operational concepts for water quality improvement. In the event of a catastrophic levee failure in the Delta, the amount of saline water entering the system could make Delta waters unusable for many months; the saline water could also have a detrimental effect on habitat quality. Therefore, it is difficult to overestimate the importance of a successful Delta levee program to achieving and maintaining good water quality.

The Comprehensive Monitoring, Assessment, and Research Program (CMARP) will be the primary vehicle for measuring the extent to which continuous water quality improvement is achieved. Performance



will be measured by comparing ambient water quality (where appropriate) to specific water quality objectives that have been established for the parameters of concern. For many water quality parameters, numerical or narrative objectives exist in water quality control plans adopted by the SWRCB and the Regional Water Quality Control Board. CALFED will use these objectives where appropriate as its targets for water quality improvement. The Water Quality Program Plan lists specific water quality targets to gauge its success; however, the Program will seek to achieve water quality that exceeds these targets where feasible and cost effective. At the same time, it is anticipated the periodic reevaluation of water quality targets will be a feature of adaptive management within this strategy.

Successfully meeting the water quality objectives depends on close coordination and collaboration among the Program, responsible State and Federal agencies and local agencies and interests. The Program will emphasize voluntary, cooperative incentive-based efforts to improve water quality, but the Program also will work with regulatory agencies to assure Program goals are accomplished where voluntary efforts prove insufficient.

*Comments supported improving water supply reliability.*

The primary water supply reliability objective of the Water Management Strategy is to “Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.” Sub-objectives collectively increase water supply opportunities and reduce the conflict among beneficial water users, improve the ability to transport water through the system, and reduce the uncertainty of Bay-Delta system water supplies. The CALFED Program has proposed a Water Management Strategy to ensure water supply reliability that recognizes the variability of water supply and demand in California. CALFED’s water supply reliability goals are to increase the utility of available water supplies (making water suitable for more uses and reuses); to improve access to existing or new water supplies in an economically efficient manner for environmental, urban, and agricultural beneficial uses; and to improve flexibility of managing water supply and demand in order to reduce conflicts between beneficial uses, improve access to water supplies, and decrease system vulnerability. System improvements, including improved Delta conveyance and new storage, can create new water supply opportunities for all beneficial uses including ecosystem needs and consumptive uses.

The primary water supply reliability objective can be accomplished by addressing defined objectives, which collectively reduce the conflict among beneficial water users, improve the ability to transport water through the Bay-Delta system, and reduce the uncertainty of supplies from the Bay-Delta system. These objectives in summary form are:

1. Maintain an adequate water supply to meet expected in-Delta beneficial use needs.
2. Improve export water supplies to help meet beneficial use needs.
3. Improve the adequacy of Bay-Delta water to meet Delta outflow needs.
4. Reduce the vulnerability of Bay-Delta levees.
5. Improve the predictability of the water supply available from the Bay-Delta system for beneficial use needs.

The Integrated Storage Investigation will provide the analyses necessary for CALFED's determination of the proper mix of groundwater and surface storage facilities. CALFED's Water Management Strategy will rely heavily on these analyses as it identifies an appropriate combination of water management tools for attaining CALFED's water supply reliability goals and objectives.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," for information concerning the objectives and purpose of the CALFED Program and a description of the Program alternatives development process. The Program alternatives and the Preferred Program Alternative are described in detail in Chapter 2 in the Programmatic EIS/EIR. Section 2.4 in the Programmatic EIS/EIR discusses the alternative variations that were not carried forward for further evaluation in this Programmatic EIS/EIR. Please consult the Phase II Report and Implementation Plan for more information about Stage 1 actions. Please consult the Implementation Plan and CMARP for a more detailed discussion of adaptive management. Specific drinking water quality targets can be found in the Phase II Report as well as the Water Quality Program Plan. Appendix C in the Water Quality Program Plan lists specific water quality targets to gauge its success. Please refer to the Phase II Report; Section 5.1 in the Programmatic EIS/EIR; and common responses 2, 4, and 6 for a more detailed discussion of CALFED's plan to meet water supply reliability objectives. Please consult common response 1 for a discussion of the programmatic nature of the document, common response 4 for a discussion of water storage in the CALFED Program, common response 14 for a discussion of water quality in the Program, and common response 16 for a discussion of the isolated conveyance facility.

## COMMON RESPONSE 6. GROUNDWATER STORAGE

This common response addresses comments about groundwater storage.

*Many comments maintain that developing additional groundwater storage is the best alternative way to meet additional water storage needs. Several comments state that development of additional groundwater storage should be maximized before any consideration is given to developing new or expanding existing surface storage facilities.*

Groundwater and conjunctive use programs have been given great importance in the CALFED Program. Development of groundwater resources is part of the Preferred Program Alternative in the Programmatic EIS/EIR. Storage of water in groundwater basins is one of a series of Water Management Strategy tools developed to address the water supply reliability problem. Based on projected future needs and estimated economical groundwater storage capacity, development of groundwater resources is an important part of the package of available tools.

**Water Supply Reliability.** The CALFED Program has proposed a Water Management Strategy to ensure water supply reliability that recognizes the variability of water supply and demand in California. CALFED's water supply reliability goals are to increase the utility of available water supplies (making water suitable for more uses and reuses); to improve access to existing or new water supplies in an economically efficient manner for environmental, urban, and agricultural beneficial uses; and to improve flexibility of managing water supply and demand in order to reduce conflicts between beneficial uses, improve access to water supplies, and decrease system vulnerability.

Several general categories of tools are included in the Water Management Strategy, all of which are being used in California to some degree: water conservation; water recycling; water transfers, both short-term and long-term; storage, both groundwater and surface water; water project operations; Delta conveyance modifications; watershed management; water quality control; and monitoring and real-time diversion management.

As part of its ongoing evaluation of the appropriate role of storage alternatives in the CALFED solution, CALFED has initiated the Integrated Storage Investigation. The Integrated Storage Investigation will coordinate existing storage investigations by individual CALFED agencies, CALFED-initiated storage evaluations, and broader water management strategies and analysis to provide a comprehensive assessment of alternative storage options and their utility to overall water management.

Specifically, the Integrated Storage Investigation will evaluate surface water storage, groundwater storage, power facility reoperation, and the potential for conjunctive operation of these different types of storage.

**Water Management Strategy.** Storage of water in surface reservoirs or groundwater basins can provide opportunities to improve the timing and availability of water for all uses. The benefits and impacts of surface and groundwater storage vary, depending on the location, size, operational policies, and linkage to other Program elements. By storing water during times of high flow and under conditions of low environmental impact, more water is available for release for environmental, consumptive, and water quality purposes during dry periods when conflicts over water supplies are critical. Storage that is properly managed and integrated with other water management tools can achieve significant improvements for a number of CALFED's water management objectives by reducing conflicts, decreasing drought impacts

on all beneficial uses, increasing supply availability, increasing operational flexibility, and improving water quality. Significant ecosystem benefits also can be achieved.

*Groundwater storage is a more cost-effective and more ecosystem-friendly alternative to the water storage concerns of CALFED; not enough emphasis has been placed on this as an alternative to surface water storage.*

The particular attributes of storage in CALFED's Water Management Strategy vary by the type and location of storage. Water storage located upstream of the Delta functions differently than storage located south of the Delta in the export area. Generally, groundwater projects are viewed as resulting in more benign on-site environmental and land use impacts than surface water storage. Construction of new surface storage facilities or expansion of existing storage facilities would result in impacts associated with each site-specific location, such as fragmentation of existing habitat corridors on small or ephemeral tributaries—blocking the movement and interchange of populations of some wildlife species from upper to lower watershed locations—and potential for loss of habitat and the resulting direct impacts on special-status species. The potential benefits of a groundwater recharge program include increased water supply reliability; reduced long-term lift costs to extract groundwater; and possible reduction or reversal of the adverse effects of past overdrafting of groundwater, such as land subsidence and water quality degradation. Groundwater supplies normally are used to augment reduced surface supplies during drought periods or other restrictions on the movement of surface water. Surface storage is more suited to rapidly discharging or receiving large volumes of water, an advantage in real-time management of high river flow periods or environmental storage releases.

Considering the magnitude of conflicts over available water in California, CALFED believes that it must continue to evaluate and implement a broad range of water management options to achieve the Program's objectives. Therefore, new storage will be developed and constructed, together with aggressive implementation of water conservation, recycling, and a protective water transfer market, as appropriate to meet CALFED Program goals. Future site-specific evaluations, the environmental review process, and permit applications will be coordinated under CALFED's Integrated Storage Investigation.

*Increasing reliance on groundwater and groundwater storage is necessary to meet the Program's objectives of water supply reliability.*

Appropriate and effective groundwater management and protection is essential to an effective Water Management Strategy and to the success of a broad range of CALFED programs, including water transfers, groundwater banking, watershed management, and water use efficiency. CALFED recognizes the critical role of local government agencies in protecting and managing groundwater resources, and will actively pursue cooperative partnerships with local agencies to achieve CALFED's objectives for groundwater banking and conjunctive use programs. CALFED is developing guiding principles for conjunctive use programs to ensure that local concerns and potential impacts are fully addressed.

During preparation of the Programmatic EIS/EIR, CALFED considered groundwater banking and conjunctive use opportunities in the Sacramento and San Joaquin Valleys and in southern California. An initial inventory of potential groundwater storage opportunities was completed in 1997. More recently, CALFED formed the Conjunctive Use Advisory Team with staff from the CALFED agencies and stakeholders. An initial task of the team was to ask about local interest for CALFED support on

conjunctive use projects. Positive responses were received throughout the state, including southern California. Based on this information, CALFED initiated a grant program to help implement locally supported conjunctive use programs that follow CALFED's guiding principles.

CALFED is developing guiding principles for conjunctive use programs to ensure that local concerns and potential impacts are fully addressed prior to implementing a conjunctive use operation. CALFED's draft principles include the following:

- Conjunctive use programs will be voluntary.
- Groundwater will first be used to meet area-of-origin needs.
- Transfers outside the basin will involve appropriate compensation for the resource.
- Pilot programs, in addition to computer models, will be used to evaluate local conjunctive use potential.
- Conjunctive use projects will be overseen by a local agency that implements "interest-based negotiation," allowing stakeholder concerns to be addressed.

CALFED's first-stage implementation includes developing cooperative partnerships with local agencies and landowners in establishing locally managed and controlled groundwater and conjunctive use projects in the Sacramento and San Joaquin Valleys. These projects will include a combination of purchase, lease, or sharing storage space with others and will include consideration of existing groundwater storage facilities. CALFED also will support legislation that furthers groundwater management at the basin level and encourages basin-wide groundwater management plans.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult the Phase II Report for additional information regarding groundwater storage. For information about the environmental consequences to groundwater, please consult Section 5.1, "Water Supply and Water Management," and Section 5.4, "Groundwater Resources," in the Programmatic EIS/EIR. Please consult the Implementation Plan for proposed groundwater banking and conjunctive use actions for Stage 1.

## COMMON RESPONSE 7. KEEP RIVERS WILD

This common response addresses comments concerning preserving and restoring rivers.

*Several comments address preserving wild and scenic rivers and restoring the free flow of rivers in the CALFED Program study area. Some comments describe the aesthetics of free-flowing streams, while others emphasize the joy of white-water rafting and other recreational activities. Many comments assert that free-flowing rivers should be preserved for future generations. Some comments declare that free-flowing rivers are necessary to maintain our quality of life and that alterations to free-flowing rivers disrupt the wilderness experience. Many comments express opposition to construction of any new dams or raising of dams on free-flowing rivers and streams. Several comments emphasize the importance of restoring free-flowing rivers because of the habitat they provide for flora and fauna.*

**Value of Free-Flowing Streams.** The CALFED Program recognizes the value of free-flowing streams, both to the ecosystem and to the public.

**Surface Storage Facility Concerns.** CALFED recognizes the value of free-flowing streams. The Program is focusing on off-stream reservoir sites and expansion of existing on-stream reservoirs, such as Shasta Lake, for any new surface water storage. CALFED recognizes California Public Resources Code Section 5093.542, which protects the free-flowing status of the McCloud River, a designated Wild and Scenic River that flows into Lake Shasta. The code allows for evaluation of a potential raise of Shasta Dam.

**Strategy for Restoration of River Flows.** The restoration of in-streamflows and Delta outflow is one of the focuses of the Ecosystem Restoration Program. The Ecosystem Restoration Program proposes target in-stream flows for each stream or river tributary to the Delta. These targets are organized by ecological management zones.

The Ecosystem Restoration Program will consider removing some small diversion or debris dams. Dams on Butte Creek already have been removed under the Program. The program is evaluating additional opportunities for dam removal on Butte Creek, Battle Creek, Clear Creek, and Mill Creek. The CALFED Integrated Storage Investigation will evaluate the feasibility of modifying or removing some small dams that impede flow and serve as barriers to fish migration. The Upper Yuba River Studies Program also will focus on opportunities for dam removal or modification.

The Program does not intend to remove any of the state's major supply dams. The multiple public benefits provided by most existing dams—water supply, flood storage, hydropower, and recreation—preclude their removal. Dams have reduced the natural variability of flows in Bay-Delta tributaries to the detriment of the ecosystem, but it is possible to reoperate reservoir releases so that they restore or mimic natural flow variability. In this manner, existing reservoirs can still provide water supply, flood storage, hydropower, and recreational benefits; but the reservoirs also can enhance the public benefits of a healthier ecosystem by approximating a more natural flow regime.

**References to Relevant Provisions in the Programmatic EIS/EIR.** For additional information, please refer to the Ecosystem Restoration Program, Volumes 1 and 2. For information on the Integrated Storage Investigation and Stage 1 actions, please refer to the Phase II Report and the Implementation Plan.

## COMMON RESPONSE 8. KEEP BAY FRESH-WATER FLOWS

This common response replies to comments about fresh-water flows in the San Francisco Bay.

*Many comments state that the CALFED Program should focus on promoting the health of the San Francisco Bay by restoring and maintaining its fresh-water flows. Some of these comments indicate that the San Francisco Bay should be included in the problem area defined by CALFED. Other comments emphasize the need for restoration of flows to historical levels.*

**Restoring Fresh-Water Flows.** One of the goals of the Program is to rehabilitate natural processes in the Bay-Delta system in order to support, with minimal ongoing human intervention, natural aquatic and associated terrestrial biotic communities—in ways that favor native members of those communities. The Ecosystem Restoration Program will seek to restore the dynamic processes of flow, sediment transport, channel erosion and deposition, and ecological succession that create and maintain natural channel and bank conditions favorable to salmon and other species.

CALFED also is committed to achieving continuous improvement in the quality of waters of the Bay-Delta estuary, with the goal of minimizing ecological, drinking water, and other water quality problems and of maintaining that quality once achieved. This objective extends to the watersheds of the estuary to the extent that water quality problems in these watersheds affect beneficial uses dependent on the estuary.

*CALFED is not directly focusing on promoting the health of San Francisco Bay, particularly the Central and South Bay areas.*

It is true that the Program has not included San Francisco Bay as part of its defined problem area (which includes the legally defined Delta, Suisun Bay extending to Carquinez Strait, and Suisun Marsh). Nevertheless, because the Bay-Delta system is part of a larger water and biological resource system, solutions to address the problems in the system will include a broader geographic scope, extending both upstream and downstream. This solution scope includes San Pablo Bay, San Francisco Bay, and portions of the Pacific Ocean out to the Farallon Islands. In particular, the Program will address interactions between the Delta and San Francisco Bay, such as flow or sediment, by examining the “inputs” and “outputs” from the defined problem area. In keeping with CALFED’s solution principle that solutions should pose no significant redirected impacts, consideration will be given to how Program activities affect the San Francisco Bay region.

**Restoring Flows to Historical Levels.** The Bay-Delta ecosystem is large, complex, diverse, and variable. It contains California’s two largest rivers, the Sacramento River (draining an area of more than 25,000 square miles) and the San Joaquin River (draining more than 14,000 square miles). These two rivers converge in the Delta which, coupled with greater San Francisco Bay, forms the largest estuary on the west coast of North America. Tributaries that drain the Sierra Nevada Mountains, Cascade Range, and Coast Ranges provide fresh-water flow to the Bay-Delta estuary, thus connecting the salty water of the Pacific Ocean with mountain forests and meadows into a vast ecosystem that encompasses most of the Central Valley.

California’s semi-arid climate produces pronounced variations in both seasonal and inter-annual precipitation. These variations in precipitation produce highly variable flows of fresh water through the

Delta tributaries and the estuary. Historically, during wet years, much of the Central Valley would flood to form a large inland sea of shallow-water habitat; during prolonged droughts, Bay-Delta tributaries were reduced to trickles confined within narrow low-flow channels.

**References to Relevant Provisions in the Programmatic EIS/EIR.** The geographic scope of the CALFED Program is presented in Section 1.3 in the Programmatic EIS/EIR. The Ecosystem Restoration Program is the Program component that will most directly affect the ecological health of the Bay-Delta. Information concerning Ecosystem Restoration Program Plan elements can be found in the program plan. Information concerning the environmental consequences of the Program elements to the Bay Region is contained in Chapters 5, 6, and 7 in the Programmatic EIS/EIR.



## COMMON RESPONSE 9. WHO PAYS? BENEFICIARIES SHOULD PAY

This common response addresses who should pay the cost of benefits received.

*Numerous comments raise issues related to the CALFED Program, many stating that beneficiaries should pay the costs of benefits received. Some comments state that the Programmatic EIS/EIR fails to address who will pay for CALFED Program actions, while others question who the beneficiaries really are. Several comments specifically address the benefit and cost of surface storage and other water facilities. Many of these comments state that taxpayers should not pay for the cost of surface storage projects, while some comments requested that public funding go toward development of water facilities. Some comments specify that southern California beneficiaries should pay for benefits they receive. Some comments state that CALFED should recognize the impacts and costs that have accrued to CVP users. Several comments state that agricultural water users should not pay for environmental water. Many comments address markets and water pricing. Numerous comments express concern that CALFED Program actions will subsidize agricultural and urban water. Some comments state that funding should be directed at conservation measures, rather than encouraging waste by providing subsidized water. Some comments address the cost effectiveness of CALFED Program actions. Some comments state that CALFED should identify public funding sources for environmental and recreational costs. Several comments address the issue of user fees.*

**“Beneficiaries Pay” Principle.** As noted in the Financing Plan (Section 5 in the Implementation Plan), a fundamental principle for allocation of CALFED Program costs is that beneficiaries should pay the cost of benefits received. Simply put, those who benefit from the Program should help to pay for it. CALFED believes this policy to be equitable, but there are reasons other than equity and fairness that the “beneficiaries pay” principle should be applied to CALFED. Having beneficiaries pay for public programs encourages them to more carefully review their water and power needs and the costs of proposed programs (including mitigation costs) in relation to the benefits they receive. Such a policy also encourages examination of a fuller range of alternatives, including locally funded measures, in order to assure that public funds are spent in the most cost-effective way to meet Program goals. However, many of the decisions on what specific facilities will be built, and how they will be configured and managed, lie in the future. In such cases, the Programmatic EIS/EIR and companion documents cannot state with specificity who the Program beneficiaries are and exactly what dollar amounts will be allocated among users. Nevertheless, the CALFED Program can define principles of financing and cost-sharing that will be used in establishing CALFED cost-sharing agreements.

Some stakeholders have suggested that under a “beneficiaries pay” principle, fees assessed to beneficiaries must be “quantified and explicitly linked to the benefits they receive.” The principle that beneficiaries should pay does not require that all benefits be quantified. Many benefits of the CALFED Program, particularly the non-market benefits, are difficult to quantify. During implementation, beneficiaries will be identified for specific projects, and those who benefit will be expected to pay. Exact cost shares will be based on a combination of cost allocation procedures and negotiations. CALFED believes that this approach is one that is both realistic and consistent with the “beneficiaries pay” principle.

During implementation, it is anticipated that Program funding will be achieved through a series of interdependent actions, including legislative appropriations, general obligation bonds, revenue bonds, user fees, and other mechanisms. The Financing Plan and the cost-sharing agreements will serve as the foundation for financing specific projects during implementation of the Program. The Financing Plan and

the cost-sharing agreements will not, in all cases, define cost-sharing responsibilities for the Program by quantifying benefits; however, they will rely on linking benefits to beneficiaries.

Many of the actions under the Preferred Program Alternative could serve multiple benefits, such as protecting agricultural lands; maintaining levee system integrity; and improving water quality, conveyance, and habitat. In some cases, the benefits of implementation will be quantifiable. In others, the benefits will vary depending on the level of implementation and the results of research, planning, and development of solution approaches based on adaptive management. The degree of progress in Stage 1 also will highly depend on the funding that becomes available to support the implementation process. It is expected that funding will come from a variety of sources, including the public (through state and federal appropriations) and general obligation bonds. Other funding sources considered in the Implementation Plan include water and power revenue bonds, user (water district) funding, and user fees, including a broad-based user fee.

Since this is a Programmatic EIS/EIR, the details for designing and financing the specific components of each program have not been finalized; however, principles and strategies are being developed to guide the Program in making sound funding decisions during implementation of the Program. The Implementation Plan contains the initial framework for developing a Program Financing Plan. This plan is a general-plan level document, however, and is designed to highlight key issues and principles that will guide funding decisions over the 30-year life of the Program. CALFED will continue working with federal and state agencies and stakeholders to develop finance agreements and further some of the issues highlighted in the Financing Plan. In addition, CALFED believes that stakeholders will have full opportunities to evaluate the cost-sharing terms for Program participation, as well as the costs and benefits of individual Program components, during the project-level planning phase for each component.

**Funding for Storage and Other Water Facilities.** CALFED has stated a policy of seeking public funding for the planning and evaluation of storage projects to ensure a comprehensive and fair comparison of storage options. However, when a storage project proceeds to construction, then the public funds used for planning and evaluation will be subject to reimbursement by the project beneficiaries. This financing policy does not foreclose the option of also receiving up-front cost sharing by potential project beneficiaries.

The costs for construction of any storage facilities will be paid for by the project beneficiaries, which could include the public, agricultural and urban water users, and hydropower users. When storage projects move out of the initial planning phase and into site-specific planning and design, beneficiaries will be identified and cost shares should be established to pay for the project, including construction, mitigation, and operation and maintenance. Public funds used to pay for the site-specific planning, design, and construction for specific projects will be reimbursed by project beneficiaries, which will be identified during the site-specific planning phase of construction. In addition, site-specific projects will be subject to further environmental documentation under NEPA/CEQA, and all stakeholders and members of the public will have full opportunities to evaluate the funding for these projects.

CALFED rejects the concept of reparations for damages based on past acts because it is not possible to accurately apportion the blame for the degradation of the Delta on any particular user or group. Second, it is destructive to the solution process. To try to place blame for past acts will lead to conflict, not to fixing the problems in the Delta. The CALFED agencies have determined that solving the problem is their priority, not finding out who caused it.

*Some comments question whether farmers, water users, water diverters, the people of California, or fishermen specifically will benefit from the Program.*

Clearly, all of the above-mentioned groups could benefit from the CALFED Program. During implementation, specific beneficiaries will be identified for specific projects, and those who benefit will be expected to pay. Any user fees should be paid by the beneficiaries of the CALFED Program. The specifics surrounding user fees also will be worked out during implementation, although some analysis regarding fees is included in the Financing Plan.

**Central Valley Project Users.** The CALFED agencies believe that the Financing Plan does an adequate job of addressing concerns, as they relate to CALFED, in the discussion on user fees and crediting. For more information on the impacts of the CVP, please refer to the CVPIA Programmatic EIS (PEIS).

The specific details surrounding crediting will be worked out during implementation, but the Financing Plan already includes a discussion on crediting. The CALFED Program has established the principle that financial contributions would be credited toward the ultimate obligations for the CALFED Program. For example, CVPIA Restoration Fund payments for programs that meet the objectives of the CALFED Program could receive credit toward funding obligations for the Program.

**Agricultural Water Users and Environmental Water.** The SWP and CVP may lose flexibility because of new laws and regulations, as well as increased demand for water. The loss of flexibility due to new laws and regulations (for example, the ESA) is not necessarily a cost that the public should pay for. Water rights are subject to regulation, and project water rights (CVP and SWP) are junior to many other water rights.

The CVPIA involves dedication of water and water user payments to the Restoration Fund. It also involves cost-sharing by the federal government and the state. CALFED agrees with this policy, and similar principles will be part of the CALFED solution. CALFED believes a mix of public money and user funding will be needed to solve these difficult problems.

**Markets and Water Pricing.** Some market transactions already have occurred in California. A legal framework has been established for them, including protection of the water rights of the selling entity. Therefore, it is likely that water districts and wholesalers already compare, at least to some degree, the cost of potential water purchases with the cost of new storage. Provided that new storage is not publicly subsidized, these comparisons with market signals have the desirable outcome mentioned by the commentor. From the standpoint of public planning, benefit-cost analyses of future storage facilities will be in a position to take into account the cost of water as revealed by market transactions. Also, a number of modeling efforts have been undertaken to estimate the value of water in current uses (for example, agriculture) both with and without a functioning water market in place (CVPIA PEIS). It is expected that these modeling efforts can play a role in future planning decisions.

*CALFED will be subsidizing water development projects for agricultural and urban water users.*

During implementation of the Program, taxpayer dollars will not be used to fund projects where the sole beneficiaries are agricultural or urban water users. CALFED has chosen a benefits-based approach to allocate the costs of the Program. Simply put, those who benefit from the Program will help pay for it.

Most projects that will be implemented by the CALFED agencies, however, will involve multiple beneficiaries, including the public. This means that a combination of both public and user funds will be needed.

The public will be expected to help pay for the Ecosystem Restoration Program actions, for example, since the public largely benefits from these actions. Significant public funds already have been allocated to Bay-Delta ecosystem restoration through state Proposition 204 funds and through federal agency budget appropriations. Public funds also may be used for the planning and evaluation of storage projects to ensure a comprehensive and fair comparison of storage options. However, should a storage project proceed to construction, then the public funds used for planning and evaluation will be reimbursed by the project beneficiaries.

**Conservation Funding.** CALFED anticipates that significant additional investments in water use efficiency will be necessary during Stage 1 and beyond to address water supply demands caused by a rapidly increasing population and increased environmental water needs. The Water Management Strategy will be studying all tools of water management, including water conservation and recycling. Storage will not be developed and constructed instead of conservation and recycling but will be developed, together with these tools.

The *Economic Evaluation of Water Management Alternatives Report*, available on the CALFED web page, also provides analysis of water management options, including both water use efficiency measures and storage.

**Cost Effectiveness of CALFED Program Actions.** CALFED agrees that if urban water users can find solutions for their problems that are more cost effective than CALFED, then water users would seek their own alternative solutions. CALFED believes that the Preferred Program Alternative will be cost effective and to the benefit of all the various stakeholders. The adoption of adaptive management to form decisions during implementation should lead to more cost-effective solutions. It is not up to CALFED, however, to compare the costs and benefits of the CALFED Program with the many possible alternative solutions that urban agencies claim to have. CALFED assumes that urban agencies will make these comparisons themselves and decide whether or not to “buy into” CALFED.

Some comments go on to say that while CALFED may raise the price of water to influence water use behaviors, water agencies cannot do this as a matter of law. Some of the actions in the CALFED Program may result in increased prices for water, but this would more closely reflect market prices than artificially increased prices. Second, mitigation costs (future environmental mitigation costs) are part of water project costs. Third, if laws or regulations require different mitigation or impose additional fees (for example, the CVPIA Restoration Fund), then water agencies can legitimately recover these costs. For example, many agencies are already paying fees levied by the CVPIA and are recovering these costs through their rates.

*CALFED should identify public funding sources for environmental and recreational costs.*

Ecosystem quality is one of the primary objectives of the CALFED Program. CALFED agrees that adequate funding, including state and federal money, is necessary to successfully meet all of the four primary objectives (ecosystem quality, water supply reliability, water quality, levee system integrity) of the Program.

Significant public funds already have been allocated to Bay-Delta ecosystem restoration through state Proposition 204 funds and through federal agency budget appropriations. The Financing Plan, included as Section 5 in the Implementation Plan, also discusses the possibility of proposing user fees to provide a reliable source of funding for ecosystem actions.

For information regarding funding for recreation, please refer to responses IPF 5.4.1-2 (in Volume II) and IA 7.7.11-3.

**User Fees.** The Financing Plan raises the possibility of using a broad-based user fee to help fund implementation of the Program. This does not mean, however, that the user fee will be the only source of funding for implementing the Program, as some comments have suggested. CALFED recognizes the need for a mix of funding sources, which might include appropriations of federal and state funds, creation of special funds, imposition of fees to support those funds, and approval of bond acts. Some other comments have argued that only public funding should be used for projects with broad public benefits. CALFED agrees that public funding should be used for projects providing broad benefits, but public funding is not the only source of funding that is appropriate. A broad-based fee, in addition to public funding, could also be used to fund a portion of those Program elements with broad public benefits, such as the Ecosystem Restoration Program and portions of the Watershed and Water Quality Program elements.

The idea behind a broad-based fee is to provide a reliable source of funding for projects with identifiable, but broad-based, benefits. Some stakeholders have suggested that broad-based user fees are inequitable and not consistent with a “beneficiaries pay” principle unless they are linked to quantified benefits. CALFED does not agree with this statement. The principle that beneficiaries should pay does not require that all benefits be quantified. Some projects have benefits that can be quantified, and these projects lend themselves to traditional means of allocating costs to project beneficiaries. Many other projects in the CALFED Program, however, have benefits that are difficult to quantify, particularly the non-market benefits. In some cases, these projects will be funded with public money. In other cases, benefits can be linked to broad groups of beneficiaries, even if the benefits are difficult to quantify. A broad-based user fee, combined with federal and state funding, is one way to pay for these kinds of projects under a “beneficiaries pay” policy. CALFED believes this approach is one that is balanced and consistent with the “beneficiaries pay” principle.

As noted in the Financing Plan, one rationale for a user fee is that impacts on the Delta are related to water use, whether the use be upstream of the Delta or by Delta exports. More generally, it is in the interest of all diverters of water from the Delta and its main tributaries to achieve security in the level of long-term water deliveries. Such security can be achieved only if the environmental goals of the CALFED Program are met. Broad-based user fees are one way in which water users can contribute to the long-term stability and security of their water supplies.

CALFED outlined different possibilities for how a broad-based fee might be structured in the Financing Plan, included as Section 5 in the Implementation Plan. In addition, some projects have benefits that can be quantified. In these cases, cost sharing will be sought from specific beneficiaries during the site-specific planning phase of these projects.

If new legislation for a broad-based fee is introduced the structure for such a fee will be explained in more detail found in the Implementation Plan, and stakeholders and the public will have full opportunities to comment on the specifics surrounding the structure of a fee. Detailed information regarding which users

would be expected to pay a user fee will not be included in the Financing Plan, but will be determined during implementation of the Program.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please refer to common response 4 for more information regarding storage. Please refer to common response 2 for more information regarding water use efficiency. For more information regarding an isolated facility/peripheral canal, please see common response 16. Please see the Phase II Report and the Implementation Plan for more information about Stage 1 actions.

## COMMON RESPONSE 10. BASELINES, WATER USE, AND CONSERVATION NUMBERS

This common response addresses the issues of numbers used in the technical analyses.

*Many comments address issues regarding the validity of numbers used in technical analysis, including: on what baseline were the environmental and water supply reliability analyses based, and on what data were the water use and water conservation numbers developed. Many comments refer to a “baseline” and advise CALFED to establish baselines or suggest how baselines should be set. Other comments refer to a different sort of baseline, one that describes water supply conditions. Several comments express concern about using water use and water conservation numbers from DWR’s Bulletin 160-98 “California Water Plan” update. Most comments indicate that CALFED should not have used the Bulletin 160 data for baseline computations or projected water savings estimates.*

**Environmental Document and Water Supply Analysis Baselines.** At least two types of baselines might be established in the context of the CALFED Program. These include baselines of environmental conditions used to identify and analyze environmental impacts of Program implementation, and water supply baselines used to measure improvement in water supply reliability.

In compliance with NEPA and CEQA, the Program described environmental condition baselines for the impact analysis. The No Action Alternative describes the anticipated physical, project operation, and regulatory features that would be in place in 2020 if the Program is not implemented. The No Action Alternative is used as a basis to compare the Program alternatives. The Program is also comparing the Program alternatives to existing conditions, which are referred to as the “affected environment” and are presented in Chapters 5, 6, and 7 in the Programmatic EIS/EIR. These comparisons are made to highlight the changes to the environment that would take place as a result of implementing the Program alternatives. The No Action Alternative and modeling assumptions used in describing the No Action Alternative and existing conditions are described in Attachment A to the Programmatic EIS/EIR.

In the competition for water supplies, stakeholders would like to derive as much benefit from the Program as possible. Stakeholders have suggested that they should receive benefits as measured against a baseline of water supply conditions. To maximize the gain, stakeholders may define their baseline as the set of conditions that existed at some previous time when they enjoyed their highest level of water supply reliability. Thus, each stakeholder group wants to measure the Program’s progress according to its own standards.

CALFED has not established a specific baseline for water supply reliability. Instead, the Program has established a goal for water supply reliability that states, “Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.”

Objectives for water supply reliability refer to water supply and timing needs for all three major water use sectors: urban, agricultural, and environmental. CALFED has amplified its objective for water supply reliability by developing a three-part strategy. To guide the implementation of this strategy, CALFED has identified three primary goals:

- Increase the utility of available water supplies (making water suitable for more uses and reuses).

- Improve the access to existing or new water supplies, in an economically efficient manner, for environmental, urban, and agricultural beneficial uses.
- Improve flexibility of managing water supply and demand in order to reduce conflicts between beneficial uses, improve access to water supplies, and decrease system vulnerability.

CALFED established a principle that beneficiaries should pay for the benefits they receive from Program actions. To apportion costs according to this principle, it may be necessary to establish water supply baselines from which to measure improvements in water supply. Financing provisions for Program implementation are outside the scope of the Programmatic EIS/EIR and likely will be decided after the ROD/CERT.

CALFED developed a regulatory baseline above which the EWA operates. It includes the 1993 winter-run biological opinion; 1995 Delta Water Quality Control Plan; 1995 delta smelt biological opinion; and full use of 800 TAF supply of water pursuant to Section 3406(b)(2) of the CVPIA, in accordance with the Department of the Interior's October 5, 1999 Decision. See the EWA section in the Phase II Report for more detail.

*The Water Use Efficiency Program's No Action Alternative significantly underestimates or overestimates water conservation, partly because of its reliance on Bulletin 160-98.*

The Water Use Efficiency Program Plan and Attachment A to the Programmatic EIS/EIR explain the role that water use efficiency numbers developed by DWR played in CALFED's program plan. Although the Bulletin 160 series estimates provide a framework, these were not the only set of data used by the CALFED agencies in preparing the water use efficiency estimates. (Chapter 7 in the Water Use Efficiency Program Plan lists the references used in developing that program plan.)

To estimate conservation potential, the Program used a variety of methods that were based on data from several sources. Estimates of agricultural water conservation potential were derived by taking DWR's "normalized" 1995 data for applied water, depletion, and crop evapotranspiration for numerous regions throughout the state. These data were used to calculate losses and conservable water, using various documented assumptions. A more explicit description of the methodology is available in the Water Use Efficiency Program Plan. Conditions are "normalized" to a certain level of development (in this case, 1995) and adjusted to remove unusual conditions affecting water supply and demand in order to facilitate identification of long-term trends. An independent review panel identified many necessary refinements that could be made to CALFED's agricultural estimates but also stated that these programmatic level estimates were "reasonable initial estimates of overall agricultural water conservation potential" (*Summary Report by the Independent Review Panel on Agricultural Water Conservation Potential*, January 1990).

CALFED's estimates were developed for a few basic reasons: to provide information at the programmatic level; to gain a better understanding of the order-of-magnitude role of conservation and recycling in statewide water management; and to aid in designing appropriate incentive programs or assurance mechanisms. The conservation estimates in the Water Use Efficiency Program Plan are not targets, objectives, or goals. CALFED is not mandating that these or any other levels of water savings be achieved. CALFED is, however, requiring that many actions be undertaken by water suppliers and water users that will result in implementing more conservation and more reuse projects, but the actual savings cannot be accurately estimated.



As presented in the Water Use Efficiency Program Plan, CALFED estimates urban water conservation potential for four water use sectors: (1) residential indoor; (2) urban landscape; (3) commercial, industrial, and institutional; and (4) water distribution system loss and leakage. Potential savings for each sector are calculated by establishing a baseline condition (residential indoor water use rates in 2020 given existing actions), assuming a no action condition (residential indoor water use rates in 2020 given implementation of best management practices [BMPs] by more suppliers and users), and assuming a with-project condition that results from CALFED's actions (residential indoor water use rates in 2020 that result from CALFED incentives and assurance mechanisms). This process results in estimates of savings under a no action condition (difference between baseline and no action assumptions), and estimated savings under with-project conditions. There is no double counting.

CALFED's estimate of urban water conservation is not based on full implementation of BMPs under the No Action Alternative. Water savings in each of the four use sectors mentioned above is developed independent of an assumption of "full implementation of the BMPs in the Urban MOU" (Water Use Efficiency Program Plan). For example, residential indoor conservation estimates were made by assuming a baseline 2020 per capita indoor water use rate and comparing that to the rate that is assumed to occur under a no action condition and subsequently to a rate assumed under conditions resulting from the CALFED Program. Full explanation of these assumptions is documented in the Water Use Efficiency Program Plan. "Full implementation" of BMPs as used in the Water Use Efficiency Program Plan is the amount of savings determined by DWR's Bulletin 160-98. In that document, DWR calculates savings for "quantifiable BMPs" only—those BMPs for which DWR could make an assumed conservation estimate—and assume a saturation level (not total saturation, but a percentage of total households implementing a quantifiable BMP like ultra low-flow toilets). Their calculations do not represent total saturation of BMPs, nor do they account for savings from nonquantifiable BMPs (for example, No 3. System water audits, leak detection, and repair). CALFED believes that it is inappropriate to assume that the "full implementation" savings estimated by DWR truly represent what can be saved if BMPs were implemented by the majority of retail water agencies and the majority of urban water users. Therefore, CALFED believes that savings in addition to DWR's value and without a CALFED Program are achievable. Furthermore, the Water Use Efficiency Program actions can result in greater water savings resulting from even greater levels of implementation of the current list of BMPs and additional conservation measures that likely will be more commonplace in the next 30 years (for example, recirculating hot water systems and low-water-use appliances).

Finally, implementation of the BMPs included in the Urban MOU are based on a cost-effectiveness test. CALFED assumes that this same cost-effectiveness test will result in more measures implemented because of no action assumptions that likely will change current cost-effectiveness calculations. CALFED has included a list of the factors assumed under the no action condition in Attachment A to the Programmatic EIS/EIR. Included in this list are several factors, such as the CVPIA, which will continue to change the existing water management environment. As such, the cost-effectiveness test applied by water suppliers and others contemplating conservation will continue to evolve, even without the influence of CALFED actions. In addition, existing trends and actions being undertaken by water suppliers and water users will continue to result in water conservation savings that do not exist today but are indicated in many local water supplier's planning studies.

However, to provide a broad evaluation of potential impacts, CALFED used a broad range of potential demands in its modeling. The No Action Alternative and the CALFED alternatives were evaluated with both 1995 and 2020 water demands. Also see response IA-5.1.4-1.

*Bulletin 160-98 overestimates water demand. The program's reliance on these demands results in an overstatement of the need for export of Bay-Delta supplies.*

There has been considerable debate over the methodologies employed by DWR in estimating water demands for Bulletin 160-98. DWR has taken steps to address these concerns and validate the Bulletin 160-98 estimates. One component of the supplies available to meet current and future demands are Bay-Delta supplies delivered by the CVP and SWP systems. Other components include imports from other sources, local water supplies, water conservation and recycling, and water transfers. Bulletin 160-98 included the assumption that by 2020, full contractual entitlement to CVP and SWP would be requested by CVP and SWP contractors. This maximum annual delivery would be about 600 TAF higher than under existing conditions.

To deal with uncertainty in future statewide demands for water and the resulting uncertainty in future demands for Bay-Delta supplies and to fully describe potential consequences of Program actions, the Program formulated two distinct bookend water management criteria assumption sets. These two sets of assumptions, referred to as Criterion A and Criterion B, serve as boundaries for a range of possible Delta inflow, export, and outflow patterns in this programmatic analysis. Under Criterion A, maximum demands for Bay-Delta water supplies through the CVP and SWP systems are held at existing levels (1995). Under Criterion B, maximum demands for Bay-Delta supplies through the CVP and SWP systems are assumed to increase to full contractual entitlement, or about 600 TAF more than existing levels. All Program alternatives were evaluated under both of these water management criteria.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," for information concerning the objectives and purpose of the CALFED Program. Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of the Water Use Efficiency Program. For additional information, please consult the Water Use Efficiency Program Plan; specifically, Section 4.7 for the methodology used to estimate agricultural water conservation potential and Section 5.4 for the methodology used to estimate urban water conservation potential. Please consult the Phase II Report for other information regarding the Water Use Efficiency Program. Please refer to common response 2 for more information regarding water conservation in the CALFED Program.

## COMMON RESPONSE 11. CURRENT AGRICULTURAL PRACTICES

This common response responds to comments concerning agricultural practices.

*Numerous comments recommend restrictions to agricultural practices. Some of these comments express support for paying farmers to not grow water-intensive crops in drought years. Some comments suggest installing water meters for agricultural water users and use of technological advances to reduce evaporative water loss as means to improve agricultural water use efficiency. Many comments state that overall water use by agriculture should be reduced. Some comments express support for basing water availability on agricultural practices. Some comments state that agricultural users pay too little for their water and that CALFED should ensure that all users pay the full cost for water.*

**Crop Selection, Agricultural Practices, and Agricultural Water Use Efficiency.** Crop selection and agricultural practices are based on many factors, including soil type, water availability, climate, grower experience, production costs, and expected financial return. Crop selection is a private sector decision, critical to the economic success of farming operations and dependent on the skill and knowledge of the individual grower. CALFED is proposing incentives for changing irrigation practices and is evaluating methods to reduce harmful agricultural drainage. However, no statutes regulate the choice of crops to be grown by farmers. While production costs, which include water costs, influence crop selection, the choices of crops to be grown and the propagation methods are outside the scope of the CALFED Program. Regarding water use measurement, CALFED will develop, after consultation with the CALFED agencies, the Legislature, and stakeholders, state legislation that requires appropriate measurement of water use for all water users in California. In developing this legislation, important technical and stakeholder issues will be addressed to define “appropriate measurement.”

**Overall Agricultural Water Use.** The overall amount of water used by agriculture in the state cannot be measured accurately. Sources include groundwater, large-scale irrigation projects, local riparian-right diversions, and multi-use reservoirs. In some areas, water can be used several times, with portions returned to the system each time. Estimates of agricultural water use vary widely, depending on the source of the numbers. While some comments state that California agriculture uses too much water, other comments state that agriculture has too little water available. The purpose of the CALFED Program is not to reduce water use of any sector in favor of other sectors but to ensure that all beneficial uses of water have a more reliable water supply and good-quality water. CALFED’s programs include incentives for agricultural water conservation, as well as programs to conserve urban water and refuge water.

**Water Pricing.** Costs for water in the state vary tremendously, depending on a large number of factors. Among these factors are the source of water used (groundwater, riparian-right stream water, contract water), location in the state, conveyance costs, electricity costs, and many other factors. For agricultural users, the costs can be very low or very high, depending on these factors. In addition, water contracts between Reclamation and DWR with water wholesalers determine the rates paid by many growers. With the exception of some users serviced by federal projects, agricultural water users in California pay the full costs of obtaining their water. The purpose of CALFED is not to equalize water rates throughout the state but to improve reliability for all users. One method that is proposed for the CALFED Program is to make water more of a market-based commodity, where that water can be sold and transferred to its highest use based on willingness to pay, subject to local area protections. It should also be noted that for new storage facilities, federal law requires that the users pay the full cost of those facilities.

**References to Relevant Provisions in the Programmatic EIS/EIR.** For information regarding agricultural water use efficiency, please refer to common response 2 and the Water Use Efficiency Program Plan. Regarding concerns that CALFED will be subsidizing agricultural and/or urban water users, please see response IPF 5.5-1 (in Volume II).

## COMMON RESPONSE 12. EFFECTS ON AGRICULTURAL LAND

This common response addresses comments related to effects on agricultural land.

*A number of comments indicate that the CALFED Program should not use any lands currently in agricultural production for Program purposes. Other related comments express the opinion that the Program should not acquire lands for government ownership that would reduce the tax base of local governments and special districts, express concern about the state's agricultural economy and potential impacts that could result from Program actions, and express the desire that water should be guaranteed to agriculture by CALFED.*

*The proposed CALFED Program should not use lands currently in agricultural production.*

To meet the land needs of the Program, CALFED will first look to use of existing state and federal land. If additional land is required, CALFED will obtain easements where practical and compatible with the intended use. Given the location of agricultural lands in the state, the Program could not be successful without some conversion of agricultural lands to Program purposes. The CALFED Program elements most likely to affect agricultural land are the Ecosystem Restoration Program, the Levee System Integrity Program, Storage and Conveyance, the Water Transfer Program, and the Water Use Efficiency Program. A more developed discussion about the possible effects of these programs on existing land uses, including agricultural land, is found in Chapters 4 and 7 in the Programmatic EIS/EIR.

Section 7.1.11 in the Programmatic EIS/EIR, "Agricultural Land and Water Use - Mitigation Strategies," contains a number of mitigation strategies that are designed to minimize the acres of agriculture that are converted to Program uses, including:

- Focusing habitat restoration efforts on developing new habitat on public lands before converting agricultural land.
- Restoring existing degraded habitat as a priority before converting agricultural land.
- Using farmer-initiated and developed restoration and conservation projects as a means of reaching Program goals.
- Siting and aligning Program features to avoid or minimize impacts on agriculture.

Other strategies in Section 7.1.11 in the Programmatic EIS/EIR provide methods to partially mitigate any conversion of agricultural land that does take place, such as "Supporting the California Farmland Conservancy Program in acquiring easements on agricultural land in order to prevent its conversion to urbanized uses and increase farm viability."

*CALFED's proposal to reduce the amount of productive farmland will result in economic and social impacts, especially in terms of reducing the tax base for local governments and special districts.*

Section 7.10 in the Programmatic EIS/EIR, "Regional Economics," acknowledges that local government finances could be negatively affected by the Program. The Program contains a number of strategies to

avoid affecting the local tax base. Some Program goals may be met without purchasing agricultural lands, such as flooding croplands on a voluntary basis in winter to provide seasonal wetlands. Also, the Program may purchase conservation easements that allow farming to continue. Mitigation strategies included in Section 7.1.11 in the Programmatic EIS/EIR include involving local governments and citizens in developing appropriate configurations for Program projects, which could include configurations to maximize retention of the tax base.

Section 7.2 in the Programmatic EIS/EIR, “Agricultural Economics,” discusses potential effects of the Program on the agricultural economy. Included are the value of California’s agricultural economy and worst-case analyses of how it could be affected. Specifically, conversions of agricultural lands to Program purposes, including storage, conveyance, ecosystem restoration, water transfers, and water quality, could reduce agricultural production. In all of these Program areas, the landowner would not suffer financially, as market values must be paid for easements, land, and water. However, sectors of the economy that provide services to agriculture, such as trucking firms, custom harvesters, and equipment companies, could be affected. These sectors are “economic multipliers” generated by agricultural production. Section 7.2 in the Programmatic EIS/EIR discusses potential reductions to agricultural production and effects on other sectors that also could be affected negatively when crop production declines. Section 7.3 in the Programmatic EIS/EIR, “Agricultural Social Issues” discusses effects on farm employees and workers, and their communities, if agricultural production declines.

*CALFED proposes to take large amounts of land and water from agricultural users for environmental and urban use instead of meeting new water development.*

One of the stated purposes of the CALFED Program is to improve water supply reliability to all users of Bay-Delta water. Given the variability in California’s climate, the many sources used for irrigation water, and the wide variances in cost and willingness to pay, CALFED cannot “guarantee” a set amount of water to agriculture in general or to any other sector. Also, there are no firm numbers to account for how much water is used by agriculture in the state. Most agricultural water sources are not metered, so that determining agricultural uses is a matter of estimation. The end use of water is normally within the discretion of an individual user or water district. It is unclear to whom water for agriculture would need to be guaranteed or how a requirement to use the water for agriculture could be enforced. No governmental mechanism exists to control the end uses of water, and no means to track the end use of all water exists. CALFED has proposed programs that will, if fully implemented, result in more reliable water supplies to all beneficial uses. These programs include the Multi-Species Conservation Strategy (MSCS) and the Ecosystem Restoration Program, to avoid future endangered species listings and resulting reductions in agricultural water supplies; the Water Use Efficiency Program, to improve conservation and recycling; conveyance improvements, such as those in the south Delta; the Water Quality Program; the EWA, to improve system flexibility; the Levee System Integrity Program, designed to avoid catastrophic levee failure in the Delta and resulting interruptions in water delivery; and the Storage element, which will investigate the feasibility of adding storage to meet identified water needs. It would be infeasible and outside the scope of the Program, however, to state that a certain number of acre-feet of water are guaranteed to agriculture statewide.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Sections 7.1, 7.2, and 7.3 in the Programmatic EIS/EIR for the impact analyses of the CALFED Program on agricultural resources. Please consult Chapter 4 in the Programmatic EIS/EIR for a summary of the potential land use changes that may take place as a result of the CALFED Program. Please consult the

respective program plans for more information about the Ecosystem Restoration Program Plan, the Levee System Integrity Program Plan, the Water Quality Program Plan, and the MSCS. Additional information about Storage and Conveyance can be found in the Phase II Report.

### COMMON RESPONSE 13. AREA-OF-ORIGIN AND WATER RIGHTS ISSUES

This common response addresses concerns about area-of-origin and water rights issues.

*CALFED received many comments expressing concerns that the CALFED Program actions will result in violations of statutory area-of-origin protections and other water rights law. Many of the commentors feel that the Water Transfer Program and other water management activities will result in adverse impacts on existing water rights holders and “source areas” from which water would be transferred.*

The CALFED Program is designed to address a wide variety of problems and concerns affecting the Bay-Delta system. While it focuses on the Delta region, the Program has the potential for affecting resources throughout the vast solution area. CALFED seeks to accomplish its objectives in partnership with landowners, stakeholders, and communities throughout the solution area, being especially mindful of the potential impacts on private property owners and property rights, including water rights.

The Program fully intends to implement its actions in a manner consistent with California water rights, including existing laws and regulations protecting areas of origin. This intention is supported by understanding that the CALFED Program does not have any legal or regulatory jurisdiction over water rights or their application. These authorities are vested in the SWRCB (Board) and in the justice system (the courts). Although the Board is one of the CALFED agencies working to develop a long-term Bay-Delta solution, the Board retains its independent regulatory authority over water rights and water quality protection as authorized in California water law. As such, the Board is regularly involved in water rights decisions and proceedings independent of the CALFED Program. The Board currently is engaged in water right hearings concerning the allocation of responsibilities to water right holders for meeting Bay-Delta water quality standards as part of other state and federal requirements. To the extent that CALFED projects will include changes in water rights that might result in significant adverse consequences, these will be considered in project-specific EIRs for which the Board will be the lead agency, and CALFED or an appropriate CALFED agency will be the applicant.

While the Board has the authority to regulate water rights, the Legislature has the authority to create, refine or change water rights law within Constitutional limits. Recently, Governor Davis signed legislation (Senate Bill [SB] 970) that includes additional water rights protection provisions. The author of this bill, Senator Jim Costa, intended these provisions to assure that the water rights of those who offer their water for sale would not be put at risk by offering water for temporary transfer to other users, including the environment.

The Water Transfer Program Plan has generated many comments about CALFED’s impacts on water rights. However, the Water Transfer Program Plan does not propose any changes to the legal structure in which the current water market operates. The program plan does include recommendations and proposals to streamline approval procedures; clarify operational requirements, such as reservoir refill and carriage water requirement; and require additional analysis and disclosure. The program does not propose any change to existing water rights or other California Water Code provisions that regulate water transfers in California.

CALFED also received comments expressing concern that future source area water needs have not been considered. However, impact analyses completed as part of the Programmatic EIS/EIR incorporated projections of future increases in source area demands, as estimated for the year 2020 by DWR’s



Bulletin 160-98. These assumptions are described in Section A.3.3 of Attachment A to the Programmatic EIS/EIR. These projected source area demands are assumed to be met as a first priority in all hydrologic modeling studies and analyses conducted for the Programmatic EIS/EIR.

Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," for information concerning the objectives and purpose of the CALFED Program. Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of the Water Transfer Program. Please see Chapters 5, 6, and 7 in the Programmatic EIS/EIR for a discussion of environmental consequences related to this and other programs. For additional information regarding the Water Transfer Program, please consult the Water Transfer Program Plan.

## COMMON RESPONSE 14. WATER QUALITY

This common response addresses comments concerning water quality and briefly explains some aspects of the Water Quality Program Plan and how the plan relates to other CALFED Program elements.

*Several comments about water quality focus on the need for good-quality water for either drinking water, agricultural water, or ecosystem water. Many comments urge CALFED to improve the Water Quality Program in order to improve water quality primarily through preventing pollution at the source. Other comments either support or oppose the idea of the CALFED Program helping to develop or strengthen water quality standards, and some comments incorporate the topic of how water quality could affect any decision as to whether or not storage proposals would go forward.*

**Water Quality Program Goals and Objectives.** Improving water quality is one of the fundamental goals of the CALFED Program. CALFED is committed to improving and protecting the water quality for beneficial uses within the Bay-Delta estuary and its contributing tributaries. The Program's goal are twofold: (1) minimizing water quality problems for all beneficial uses; and (2) maintaining higher water quality once it is achieved. This objective extends to the watersheds that flow into the estuary, to the extent that water quality problems in these watersheds affect beneficial uses dependent on the estuary. Appendix C in the Water Quality Program Plan lists specific water quality targets to gauge its success; however, the Program will seek to achieve water quality that exceeds these targets where feasible and cost effective. At the same time, it is anticipated that periodic reevaluation of water quality targets will be a feature of adaptive management within this strategy.

*CALFED must work closely with urban water suppliers to establish standards and promote methods to improve Bay-Delta water.*

Successfully meeting the water quality objective, outlined in the Water Quality Program Plan, depends on close coordination and collaboration among the CALFED agencies, responsible state and federal agencies, and local agencies and interests. The Program will emphasize voluntary, cooperative, incentive-based efforts to improve water quality; but the Program also will work with regulatory agencies to ensure that Program goals are accomplished where voluntary efforts prove insufficient.

**Environmental Water Quality Improvement Strategy.** CALFED's environmental water quality goal is to provide water in the Bay-Delta of sufficient quality to protect all ecological beneficial uses of the water. For many water quality parameters, numerical or narrative objectives exist in Water Quality Control Plans adopted by the SWRCB and Regional Water Quality Control Boards (RWQCBs). CALFED will use these objectives where appropriate as its targets for water quality improvement.

*Restoring water quality is an investment in ecosystem and human health; however, other viewpoints contend that water quality improvement must happen before the Ecosystem Restoration Program is carried out.*

Water quality improvement is a key element of the ecosystem restoration strategy. Several water quality constituents in the Delta are at levels that could cause chronic or acute toxicity to aquatic and terrestrial organisms. Toxicity testing in the Delta and its two main tributaries, the San Joaquin River and the

Sacramento River, shows that Bay-Delta water is frequently toxic to some test species. Since state and federal agencies already are required to compile a list of waterbodies that do not meet specific water quality standards, the Program used that list to develop a portion of the Water Quality Program's scope.

CALFED has identified several constituents of concern for which individual actions and studies have been proposed. Similar to the drinking water quality improvement strategy (discussed below), the individual strategies for the environmental constituents of concern contain actions such as source reduction and mine remediation. Topics of the studies proposed include source identification, interaction with the environment, and bioavailability. Each strategy will be developed and implemented under the scrutiny of a public advisory group. Both the studies and actions require continuous monitoring and assessment. The major areas that have been identified for action and the basic programmatic actions are:

- Low dissolved oxygen and oxygen-depleting substances (in the lower San Joaquin River, south Delta, and elsewhere).
- Mercury (in the Sacramento River, Cache Creek, the Delta, and the Bay).
- Pesticides (from urban and agricultural uses of current pesticides).
- Organochlorine compounds (compounds like DDT and PCBs).
- Salinity (concentrated mostly in the San Joaquin Valley).
- Selenium (a naturally occurring salt in the San Joaquin Valley that becomes concentrated in agricultural drainage and a component of Suisun and San Pablo Bay petroleum refinery discharges).
- Trace metals (from mines, agriculture, and urban areas).
- Turbidity and sedimentation (predominantly in the watershed).
- Toxicity of unknown origin (predominantly in the Delta).

**Drinking Water Quality Improvement Strategy.** The CALFED drinking water quality objective is to improve source water quality that allows for municipal water suppliers to deliver safe, reliable, and affordable drinking water that meets and, where feasible, exceeds applicable drinking water standards. The CALFED strategy for improving drinking water quality is to reduce the loads or impacts of bromide and other constituents of concern through a combination of measures, including source reduction, alternative water sources, treatment, and storage and conveyance improvements.

*It does not appear that water quality enhancements will occur as a result of CALFED Program efforts.*

Drinking water supplies from the Delta contain higher bromide concentrations than are found in the drinking water supplies of about 90% of the nation. Bromide reacts with disinfection chemicals to form harmful chemical by-products that have increasingly raised health concerns for consumers. Most of this bromide comes from the ocean as a result of its connection with the Sacramento-San Joaquin Bay-Delta estuary. Additional constituents of concern for drinking water include organic carbon, which also

contributes to the formation of disinfection by-products, pathogens, nutrients, total dissolved solids (TDS), salinity, and turbidity.

CALFED's specific target for providing safe, reliable, and affordable drinking water in a cost-effective way is to achieve either: (a) average concentrations at Clifton Court Forebay (CCFB) and other south and central Delta drinking water intakes of 50 micrograms per liter bromide and 3.0 milligrams per liter TOC; or (b) an equivalent level of public health protection, using a cost-effective combination of alternative source waters, source control, and treatment technologies. CALFED has not adopted a specific numeric target for salinity (other than meeting existing Delta standards) but does have a preliminary objective of reducing the salinity of Delta supplies. The drinking water quality improvement strategy is composed of a combination of actions and studies developed and performed under the scrutiny of a public advisory group (the Delta Drinking Water Council, comprised of urban water agency, environmental group, business, Delta, and public health agency representatives). Interim milestones may be developed in consultation with the Delta Drinking Water Council to help measure progress toward achieving CALFED's public health protection objectives. The actions and studies to be performed as components of the strategy are:

- Source control
- Conveyance improvements
- Storage and operations
- Monitoring and assessment
- Constituent studies
- Treatment
- Health effects
- Alternative sources

Various actions require project-level specific infrastructure changes. Changes range from structures for monitoring, to plumbing for alternative sources, to creating or expanding storage.

**CALFED's Role in Setting Water Quality Standards.** CALFED is a cooperative, inter-agency effort involving many state and federal agencies with management or regulatory responsibilities for the Bay-Delta. Each participating agency bears its respective authorities and responsibilities, independent of CALFED efforts. One primary purpose of CALFED is to facilitate the collaborative and cooperative use of these authorities and responsibilities, as well as CALFED resources, to better address the range of problems facing the Bay-Delta. CALFED does not possess independent, regulatory authority over water quality. However, CALFED does recognize the need for participating agencies to exercise their responsibilities with regard to water quality. CALFED will work with all entities in support of achieving its water quality goals.

*Protecting and improving drinking water is paramount, and the task of protecting and improving drinking water quality can be achieved by CALFED promoting and enhancing advanced drinking water treatment. Establishing a Delta Drinking Water Council is a good start in achieving the water quality goals and objectives.*

State and federal agencies with water quality jurisdiction, as well as local agencies, will continue to be responsible for establishing and achieving water quality standards. For example, the SWRCB establishes Bay-Delta water quality salinity standards and will continue to do so regardless of CALFED Water

Quality Program implementation. Success in achieving the CALFED water quality objectives will depend on close coordination and collaboration among agencies with jurisdiction over water quality and stakeholders with an interest in water quality. The following agencies are identified as having key roles: the U.S. Environmental Protection Agency; USFWS; U.S. Department of Agriculture; California Department of Food and Agriculture; California Department of Health Services; California Department of Pesticide Regulation; SWRCB; Central Valley RWQCB; and San Francisco Bay RWQCB.

Water quality actions generally fall into four categories based on the targeted activity or source of pollution. These categories are mine drainage, urban and industrial sources, agricultural drainage, and sources of drinking water quality degradation. Technical teams from the Water Quality Technical Group will be organized in each of the Water Quality Program action categories to receive input for developing implementation plans. A Delta Drinking Water Council has been formed to advise the CALFED Program and the CALFED Policy Group through the BDAC on necessary studies and actions to meet CALFED's drinking water objectives. Some actions are sufficiently developed for early implementation; while others rely on comprehensive monitoring, pilot studies, and research to improve the information needed for effective water quality management.

*Water quality improvements for Delta exports may depend on decisions regarding storage and conveyance options.*

Bromide, organic carbon, and salts are constituents of major concern for drinking water; salts are of importance to agricultural uses of Delta waters. Concentrations and loadings of these constituents will be affected by actions in the Water Quality Program and by the choice of storage and conveyance options. Since bromide is a constituent of the total salt load, the analysis in the Water Quality Program Plan also can serve as a preliminary model for the effects of the Water Quality Program on total salt in the system.

Surface water and groundwater storage, along with Delta conveyance improvements, can help in the management of inflows to and exports from the Delta. These improvements could be used to improve drinking water quality, as well as to provide additional ecosystem protection and enhance water supply reliability. Adaptive management principles will be used to balance operations to meet these objectives. A cooperative study led by CALFED and several urban stakeholders recently was initiated to explore the potential for water quality improvements through management of water project operations. As a starting place, the group considered the potential for water quality improvements using the system flexibility provided by the Delta conveyance improvements that are expected during Stage 1 of implementation of the CALFED Program.

Typically, April through July are the most favorable months to use the Delta as a source of drinking water. Outflow from natural runoff is usually high enough to push sea water out of the Delta, and the period is outside the peak TOC loading from agricultural drainage. Water supply needs are greatest in these months because of direct demand requirements (which are supplemented by San Luis Reservoir releases). However, fishery concerns have resulted in a shift in exports from these higher water quality spring months to the lower water quality fall months, with a corresponding degradation in delivered water quality. In recent years, for example, Delta smelt take at the export pumps has been elevated in May and June. Given these special circumstances, several operational strategies could be adopted to improve water quality delivered from the Delta for drinking water, including outflow management and export management. The effectiveness of these strategies could be enhanced by constructing additional storage facilities.

**Outflow Management.** Increasing Delta outflow in fall months through reservoir releases could reduce peak bromide and salinity concentrations in south Delta drinking water diversions. (Delta outflow has less influence on water quality at the North Bay Aqueduct's Barker Slough intake.) Preliminary modeling studies conducted by CALFED suggest that, depending on the amount of outflow enhancement and assuming some Delta conveyance improvements, peak reduction of bromide and salinity in the south Delta in fall months could range from 20 to 30%. Such an operation would entail a water supply risk, as the filling of San Luis Reservoir would be delayed. However, the availability of conveyance improvements (that is, south Delta improvements and the joint point of diversion), along with the ability to recover some storage losses through runoff capture, could significantly reduce water supply losses. With additional storage facilities north or south of the Delta, peak fall bromide concentrations could be lowered by as much as 30-50% in many years, including the driest ones.

**Export Management.** Quality of delivered and stored water south of the Delta could be improved by shifting diversions to periods with better Delta water quality. When operating to meet water supply reliability and ecosystem objectives, the least risky operation is to begin filling San Luis Reservoir as soon as water and export capacity are available. This typically occurs in fall of most years. However, if outflow has been low throughout summer and fall months, sea-water intrusion will occur in the south Delta, and bromide and salinity concentrations will be elevated. If hydrologic conditions improve as the water year develops, outflows will increase and salinity will be pushed out of the Delta. Under these hydrologic conditions, it would be beneficial to postpone exports to fill San Luis Reservoir until Delta water quality has improved. However, there is no guarantee that fish conditions will be favorable and that surplus water will be available in the Delta for export.

Conveyance improvements such as south Delta improvements and the joint point of diversion could offset the risk associated with selectively filling San Luis Reservoir. Additional storage south of the Delta also could offset the risk associated with selectively filling San Luis Reservoir. Preliminary modeling studies conducted by CALFED suggest that the most efficient role of additional south-of-Delta storage for drinking water quality purposes would be to make releases for direct delivery when foregone exports in the Delta are not recovered later in winter. Filling of south-of-Delta storage would be restricted to the periods when conveyance and pumping capacity were available and water quality in the Delta was relatively good. These conditions likely would overlap in late winter and spring.

While the preceding discussion has focused on export management for bromide and salinity reduction, export management strategies also could be implemented to reduce organic carbon loads in drinking water diversions. Export reductions during periods of peak organic carbon loading (typically in February and March) would benefit Delta fisheries in most years as was shown in recent CALFED EWA gaming studies. The EWA gaming exercises allowed project operators, fishery agency biologists, and stakeholders to work together as they reacted to the constant change in hydrological and biological conditions that is typical of the Delta. Risk to water supply reliability would depend on which assets are available for supply recovery.

Although the effects of additional upstream storage may differ, depending on its location and operations, additional upstream storage generally would increase the flexibility to provide for additional fresh-water releases and Delta inflows that will improve Delta water quality. These benefits would be most apparent in dry months and seasons when additional water would be needed to meet consumptive and environmental demands. Upstream storage releases also could benefit export water quality during dry years.

## Reducing Point Source Pollution to Drinking Water

*Pollution prevention programs, along with water conservation, should be the central approach to achieving water quality and water reliability goals.*

Safe drinking water is not a fixed target. Its definition changes continually as new scientific information becomes available, as understanding of water quality and human health impacts improves, and as regulatory developments reflect new scientific findings. The CALFED drinking water improvement strategy must, therefore, be a continually evolving process to achieve the vision not only of providing drinking water that meets standards for public health protection but also of continually striving toward excellence in drinking water quality. This section identifies the initial features of this strategy, with the understanding that this constitutes only the beginning of a continuing process. Evolution of the strategy will be through the full involvement of the CALFED agencies, stakeholders, and the public.

*There is no clear schedule with a quantifiable deadline in the Programmatic EIS/EIR regarding achieving water quality goals.*

Several source water constituents create difficulties for the production of a safe drinking water supply from Delta sources. These include bromide, natural organic matter, microbial pathogens, nutrients, TDS, salinity, and turbidity. All these constituents are naturally occurring, to one degree or another, and some are magnified by anthropogenic actions. Changes in treating drinking water and reducing sources of contaminants can improve the quality and safety of drinking water from the Delta. Future drinking water regulations may, however, require improvements beyond those that can be gained through the actions specified in the Water Quality Program Plan. The priority actions listed in the plan are those that can be implemented in the nearer term with the potential to improve water quality. The degree to which taking these actions may correct the problems is not addressed.

The reader is reminded that Water Quality Program actions are intended to be implemented irrespective of the storage and conveyance alternative selected. Actions focus on source control and prevention that should be undertaken in addition to any water quality improvements that may result from selection of storage and conveyance options. Priorities for action were identified based on the apparent potential of an action to improve water quality and its capability for nearer term implementation. The perception is growing that CALFED alternatives should be decided on in a phased approach over several years. Near-term drinking water regulations will be promulgated prior to implementation of storage and conveyance options and realization of associated water quality benefits (Stage 1 of the Disinfectants/Disinfection By-Product Rule was promulgated in December 1998, and Stage 2 of the regulation is targeted for May 2002).

The general approach to shorter term drinking water quality improvement was to reduce loadings of constituents of concern, reduce variability of source water quality, and enhance treatment flexibility—rather than rely on source replacement with higher quality waters or relocation of intakes to attain higher-quality source waters. However, these latter options were discussed and developed as appropriate. This is a general list and not all items will apply to each withdrawal point or to each delivery system using Delta source waters.

## Relationship to Other CALFED Program Elements

CALFED's strategy is founded on reducing or eliminating constituents that degrade water quality at their source. However, other components of the CALFED Program can affect water quality. Watershed activities can improve water quality in the Bay-Delta system by helping to identify and control non-point sources of pollution, and identify and implement methods to control or treat contaminants in the upper watersheds. CALFED has developed a Watershed Program with strong linkages to both the water quality improvement strategy and the ecosystem restoration strategy.

Surface water and groundwater storage, along with Delta conveyance improvements, can help in the management of inflows to and exports from the Delta. These improvements could be used to improve drinking water quality, as well as to provide additional ecosystem protection and enhance water supply reliability. Adaptive management principles will be used to balance operations to meet these objectives. A cooperative study led by CALFED and several urban stakeholders recently was initiated to explore the potential for water quality improvements through management of water project operations. The Integrated Storage Investigation will include more refinement and analysis of operational concepts for water quality improvement.

Water use efficiency measures can improve water quality entering the Delta by reducing some agricultural and nonagricultural discharges that contain pollutants. Ecosystem restoration actions may degrade drinking water quality by increasing organic carbon loads; therefore, these actions will need to be structured to minimize adverse water quality impacts while meeting the environmental restoration project objectives.

Water quality can affect the ability to expand water use efficiency measures, such as conservation, water recycling, and conjunctive use. These measures depend on the availability of high-quality water to prevent salt damage of irrigated land or groundwater basins, prevent corrosion of industrial equipment and domestic plumbing and appliances, and achieve blended water salinity objectives. In the event of a catastrophic levee failure in the Delta, the amount of saline water entering the system could make Delta waters unusable for many months; the saline water also could result in a detrimental effect on habitat quality. Therefore, it is difficult to overestimate the importance of a successful Delta levee program to achieving and maintaining good water quality for the beneficial uses of Delta waters.

The CMARP is the primary vehicle for measuring the extent to which water quality improvement is achieved. Performance will be measured by comparing ambient water quality (where appropriate) to specific water quality objectives that have been established for the parameters of concern.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult the Water Quality Program Plan for detailed information about the program and its inter-related activities with the rest of the CALFED Program. Specific drinking water quality targets can be found in the Phase II Report as well as in the Water Quality Program Plan. The Water Quality Program Plan presents an analysis of the capacity of Water Quality Program actions to affect concentrations of bromide and organic carbon in drinking water supplies taken from the Delta. Please consult the Water Quality Program Plan for a list of potential near-term action items developed by the Drinking Water Work Group. Additional information about the Water Quality Program element is in Section 5.3 in the Programmatic EIS/EIR. Please consult the Phase II Report and the Implementation Plan for more information about Stage 1 actions.



## COMMON RESPONSE 15. EXPORTING WATER TO SOUTHERN CALIFORNIA

This common response replies to comments concerning exporting water to southern California.

*Many comments indicate that the export of Bay-Delta water to southern California should not be included as part of the Preferred Program Alternative. Some of these comments express concern that water exports to southern California endanger the health of the Bay-Delta system. Some comments state that water should not be diverted beyond current levels, while others state that current export levels are excessive. Some individuals feel that water exports to southern California should not be included in the Preferred Program Alternative without implementation of water conservation or water quality improvement measures.*

*CALFED is trying to balance the needs of the Bay-Delta with the need for water exports.*

Two of the CALFED objectives are to provide good-quality water for all beneficial uses and to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. The CALFED Program is trying to balance the needs of the Bay-Delta ecosystem and in-Delta water quality with the need for water exports. In this manner, the Program is focusing on reducing the impacts of water diversions rather than focusing on reducing the volume of export of Bay-Delta water. Many of the impacts associated with water diversions—such as in-Delta water quality and Delta outflow—are a function of when the water is diverted; consequently, the Program is proposing to manage the timing of diversions in a way that minimizes their impacts.

*The Water Use Efficiency and Water Quality Programs are integral elements of the CALFED Program.*

No single water management tool or CALFED Program element can adequately address all the needs for improving water supply reliability. The primary tools CALFED will use to achieve the goals and objectives of the Water Management Strategy include the Water Use Efficiency Program; Water Transfer Program; Conveyance, including south Delta improvements; Storage; and operational strategies, such as real-time diversion management. In addition to these primary tools, the Water Management Strategy will rely on additional CALFED Program tools, including the Watershed Program, Water Quality Program, and real-time monitoring through the CMARP. In evaluating and developing the appropriate mix of water management tools, CALFED's Water Management Strategy will consider the relative ability of the tools individually and in combinations to satisfy the CALFED solution principles.

One consideration is that the various water management tools differ in their flexibility—that is, their adaptability to varying hydrologic conditions and management objectives. For example, many water conservation measures result in substantial benefits in reducing overall demand but, once implemented, do not provide flexibility to react to changes in hydrologic circumstances. Also, as more conservation measures are implemented as part of the normal use pattern, additional conservation will be more difficult to achieve or more costly, or behavioral changes will be required of users to conserve more water in order to respond to shortages. Water recycling also can help to attain CALFED's water utility and water access goals, but the cost can be quite high. Therefore, it is important to evaluate not only individual tools but also combinations of tools for flexibility.

Storage and Conveyance elements may enhance the flexibility of system operations to help manage the impacts of diversions. For instance, new or expanded storage facilities located near the Delta could allow increased diversions from the Bay-Delta system during times that are less disruptive to the ecosystem and in-Delta water quality. Exporters then could draw on this stored water supply when the needs of the ecosystem or in-Delta water quality require the south Delta pumping facilities to curtail or cease operations. In this manner, the needs of the Bay-Delta ecosystem are balanced with in-Delta water quality and water supply reliability for exporters.

Linkages and assurances are critical to the process of evaluating and constructing new storage in the CALFED Program. All aspects of the CALFED Program are inter-related and interdependent. Ecosystem restoration is dependent on supply and conservation. Supply is dependent on water use efficiency and consistency in regulation. Water quality is dependent on improved conveyance and healthy watersheds. The success of all CALFED Program elements depends on expanded and more strategically managed storage. All of the CALFED Program actions will need to comply with applicable regulatory programs. Most potential surface water storage projects being evaluated by CALFED will need to comply with, among other things, the requirements of the state and federal ESAs, the SWRCB's Clean Water Act Section 401 certification program, and the U.S. Army Corps of Engineers' Section 404 permit program.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," and common response 1 for information concerning the objectives and purpose of the CALFED Program and a description of the Program alternatives development process. Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for descriptions of the alternatives. Please refer to Section 5.1 in the Programmatic EIS/EIR, "Water Supply and Water Management," for a discussion of water supply and management issues. Please consult common response 2 and the Water Use Efficiency Program Plan for information regarding water conservation measures, and common response 14 and the Water Quality Program Plan for information regarding water quality issues. Please refer to common response 5 for a discussion of how the Program will improve water supply reliability. Please see the Phase II Report and the Implementation Plan for more information about Stage 1 actions.

## COMMON RESPONSE 16. ISOLATED FACILITY/PERIPHERAL CANAL

This common response responds to comments that focus on whether or not to build an isolated facility (peripheral canal) and the contingent diversion facility near Hood. These comments do not focus on other aspects of water conveyance.

*Individual comments are either in support of building an isolated facility as soon as possible or of never constructing an isolated facility. Some comments identify the contingent diversion facility near Hood on the Sacramento River as simply the first phase of an isolated facility and therefore feel it should not be considered as part of the Preferred Program Alternative.*

CALFED evaluated an isolated facility as a feature of Alternative 3. In some cases, the comments compare this facility to the peripheral canal, which sparked a divisive confrontation in a 1982 state ballot initiative. While the isolated facility shares some of the same objectives of the peripheral canal, there are significant differences between the two projects. The scope of the two projects is significantly different. The peripheral canal proposed in 1982 was designed to transport 23,000 cubic feet per second (cfs) of water. In Alternative 3, CALFED evaluated an isolated facility in the range of 5,000-15,000 cfs as part of a comprehensive program designed to solve multiple problems in the Bay-Delta. The peripheral canal was a stand-alone project, to be operated as an extension of the SWP, principally for the purpose of increasing the state's developed water supply to meet future needs. Unlike the peripheral canal, under Alternative 3, exports from the south Delta would continue. The amount of those exports would depend on the size of the isolated facility selected.

**CALFED's Delta Conveyance Strategy.** CALFED's strategy is to develop a through-Delta conveyance alternative based on the existing Delta configuration with some modifications, evaluate its effectiveness, and add additional conveyance and/or other water management actions if necessary to achieve CALFED goals and objectives. The Preferred Program Alternative does not include an isolated facility.

Because of the many complex interactions within the Bay-Delta system, successfully implementing a through-Delta strategy requires careful balancing of actions to address a wide range of concerns, including water quality, flood control, fisheries, water levels, circulation patterns, channel scour, and sediment deposition. Actions that improve water quality and flow direction in one region of concern, for example, may in turn create adverse impacts elsewhere. Because the understanding of these complex hydrodynamic, biological, and chemical interactions is still incomplete, it will be necessary to approach the optimization of CALFED's strategy with a high degree of cooperation, rigorous monitoring, scientific analysis, and an open mind to solution options. It also will be essential that the implementation of proposed solution actions be linked so that the appropriate balance of benefits and impacts is maintained throughout the implementation period.

As part of the Preferred Program Alternative, CALFED will study and evaluate the need for a screened diversion through-Delta facility on the Sacramento River, with a range of diversion capacities up to 4,000 cfs as a measure to improve drinking water quality. The historical emphasis has been on a screened diversion at Hood on the Sacramento River. This and other potential sites will be considered as part of this evaluation. The study will determine whether the facility is needed to improve water quality in the Delta and at the export facilities and whether the facility can be constructed and operated without adverse effects on fish in the Sacramento and Mokelumne Rivers. The CALFED Program has committed to a

target for drinking water quality of either (1) average concentrations at the south and central Delta water intakes of 50 micrograms per liter bromide and 3.0 milligrams per liter TOC; or (2) an equivalent level of public health protection, using a cost-effective combination of alternative source waters, source control, and treatment technologies. The diversion facility on the Sacramento River is being evaluated as part of the Preferred Program Alternative because of concerns that increased closures of the Delta Cross Channel (DCC) for fish protection will result in adverse impacts on water quality in the central and south Delta. Modeling performed during evaluation of CALFED alternatives suggests that fish-friendly reoperation of the DCC may result in increases in TDS and in total bromides. The diversion facility on the Sacramento River was chosen because it provides a good balance of physical features that minimizes effects on delta smelt migration, reduces diversion of sediment from the river, and reduces tidal influences on fish screen effectiveness—while providing topographic and geologic conditions that would allow a diversion structure to be constructed near sea level, on mineral soils, and through mostly agricultural lands. The diversion facility on the Sacramento River likely would include a fish screen, pumps, and a channel between the Sacramento and Mokelumne Rivers.

Fishery concerns are associated with a diversion facility on the Sacramento River. These concerns center on possible disruption to migration of salmon, smelt, splittail, sturgeon, steelhead, other native fish, and striped bass. Although a screened diversion on the Sacramento River would keep out migrating salmon in the Sacramento River, flows from the Sacramento River into the Mokelumne River system may attract adult returning salmon to the downstream side of the screens. This “back of the screen” phenomenon could result in stranding or potential increased mortality associated with a fish passage structure. More broadly, the concern exists that the negative fisheries impacts associated with the diversion facility may actually be greater than the positive benefits associated with the DCC closure that may produce the water quality degradation. Fishery impacts will be a key factor, together with water quality benefits, in the evaluation of the diversion.

A diversion facility on the Sacramento River, if ultimately constructed, would be located in the same corridor that has been identified as the best route for an isolated facility. This suggests that the design of the diversion facility should be compatible with a future isolated facility, should an isolated facility be required in the future. It is important to reiterate that an isolated facility is not part of the CALFED Preferred Program Alternative.

The CALFED Program proposes significant improvements in the water conveyance facilities in the Delta in Stage 1, which will be pursued through site-specific environmental review and permitting. These improvements include:

- Construction of a new screened intake at CCFB with protective screening criteria.
- Construction of either a new screened diversion at Tracy with protective screening criteria and/or an expansion of the new diversion at CCFB to meet the Tracy Pumping Plant export capacity.
- Implementation of the joint point of diversion for the SWP and CVP, and construction of interties.
- Construction of an operable barrier at the head of Old River to improve conditions for salmon migrating up and down the San Joaquin River.

- Implementation of actions to ensure availability of water of adequate quantity and quality for agricultural diverters within the south Delta, and improvement of the aquatic resources in the lower San Joaquin River and south Delta. Actions may include channel dredging, extension and screening of agricultural intakes, construction and operation of operable barriers, and levee setbacks and levee improvements. Actions will be staged, with appropriate monitoring and testing, to guide the implementation process.
- Operational changes to the SWP operating rules to allow export pumping up to the current physical capacity of the SWP export facilities.
- Study and evaluation of a contingent screened diversion facility on the Sacramento River, with a range of diversion capacities up to 4,000 cfs, as a measure to improve drinking water quality in the event that the Water Quality Program measures do not result in continuous improvements toward CALFED drinking water goals. The contingent diversion facility likely would include a fish screen, pumps, and a channel between the Sacramento and Mokelumne Rivers. As mentioned above, the diversion facility is a contingent action to be considered only after assessments are satisfactorily completed. If these evaluations demonstrate that a diversion facility is necessary to address drinking water quality concerns and can be constructed without adversely affecting fish populations, it will be constructed as a part of the Preferred Program Alternative late in Stage 1.
- Construct new setback levees; dredge and/or improve existing levees along the channels of the lower Mokelumne River system from Interstate 5 downstream to the San Joaquin River.

The Preferred Program Alternative also includes a process for determining the conditions under which any additional conveyance facilities and/or other water management actions would be taken in the future. The process would include:

- An evaluation of how water suppliers can best provide a level of public health protection equivalent to Delta source water quality of 50 parts per billion bromide and 3 parts per million TOC.
- An evaluation based on two independent expert panels' reports—one on CALFED's progress toward these measurable water quality goals and the second on CALFED's progress toward ecosystem restoration objectives, with particular emphasis on fisheries recovery.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for an overview of conveyance by alternative. Please see Chapters 5, 6, and 7 in the Programmatic EIS/EIR for a discussion of environmental consequences related to the differences in conveyance by alternative. Please see the Phase II Report and the Implementation Plan for more information about Stage 1 actions.

## COMMON RESPONSE 17. GROWTH/PLANNING ISSUES

This common response responds to comments about growth and planning issues.

*Several comments urge that population growth and planning issues be given consideration in California water management and the CALFED Program. Some comments express concern that the limited water resources of California cannot keep being developed to support continual population growth. Many comments express support for population growth control and urban development restrictions. Other comments state that rather than restricting population growth and urban development, the focus should be on fair and efficient water management that limits growth in water consumption. Many comments address growth-inducing impacts, some expressing concern that new storage facilities will lead to increased urban sprawl, with no incentives to facilitate water conservation.*

**Population Growth Management and Development Regulation Is Beyond the Mandate of the CALFED Program.** It is correct that if trends in population growth continue, many areas in California face more severe water shortages by 2020. The issue of population growth and the demands that new population places on natural resources are certainly relevant to the problems the CALFED Program is facing. It is important to note that the Program is not charged with the mission of satisfying the state's future water needs (please see common response 22); the Program's mission is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. Accordingly, population growth management and development regulation, such as controlling the rate and location of housing development in California, is beyond the mandate of the CALFED Program. Local and regional government entities—such as city councils, county boards of supervisors, city and county planning commissions, and regional planning agencies establish the policies that manage population growth-related development, controlling and managing population growth.

**Growth-Inducing Impacts.** Resource planners have long debated the role of water in population growth. Water is an example of a resource that may be considered growth-inducing, since development of a region cannot occur without ample water supplies and supply reliability. However, a shortage of water resources in a region can be overcome by technology such as storage, transfer, and desalination projects. Regional growth is therefore dependent, in part, on the cost of developing necessary resources in a region.

Growth-inducing impacts are the ways in which the proposed project could foster, either directly or indirectly, economic or population growth, or the construction of additional housing in the surrounding environment. At the programmatic level, growth-inducing impacts on resources can be described only broadly. For the purposes of this Programmatic EIS/EIR, any increase in water supply or water supply reliability was assumed to be growth inducing. Without additional specific information concerning the geographic area where increases in water supply or water supply reliability could occur, it is difficult to assess the impacts on any particular region. Such necessary specific information includes cost and availability of other water supplies or other factors that could induce or inhibit growth. Therefore, under NEPA and CEQA criteria, we must assume that the CALFED objective to improve water supply reliability could induce growth, with subsequent environmental consequences. By doing so, the Programmatic EIS/EIR presents the full range of possible environmental consequences related to the CALFED Program. Growth-inducing impacts will be analyzed in greater detail in future site-specific NEPA/CEQA documents that are tiered from this document. Please refer to Chapters 5, 6, and 7 in the

Programmatic EIS/EIR for more detailed discussions of potential growth-inducing impacts of Program actions.

**Program Measures to Reduce the Impact of an Expanding Population on the Bay-Delta System.** While the Program has no authority over population growth, the Preferred Program Alternative contains components that will reduce the impact of an expanding population and development on Bay-Delta resources. The Water Use Efficiency Program will increase water supply reliability by more efficient use and reuse of existing water supplies. This program will allow cities and counties to stretch their existing water supplies in order to service an expanding population through an increase in the exchange of water conservation and recycling technical information and by providing financial incentives to urban and agricultural water users. Regarding concerns that new water storage facilities will precipitate a belief in unlimited water resources with no incentives for water conservation, a high level of water use efficiency will be developed concurrently with new surface storage projects.

The Water Transfer Program may facilitate an increase in water supplies to some urban areas by better enabling water to move between regions, thus allowing already developed water to be reallocated rather than requiring new supplies to be developed. Through water quality improvements, the Water Quality Program may reduce demands for certain beneficial uses, thereby increasing the available water supply. Improvements from the Conveyance element may allow more water to be exported from the Delta while meeting in-Delta needs. Additional water supply achieved under the Storage element may be used for municipal, agricultural, and environmental purposes. Such measures will reduce, and perhaps preclude, the need for additional diversions of Bay-Delta water, thereby reducing the impacts of an expanding population on the Bay-Delta system.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please consult Chapter 1 in the Programmatic EIS/EIR, "Program Description," for information concerning the objectives and purpose of the CALFED Program. Please see Section 3.2 in the Programmatic EIS/EIR for a summary of potential growth-inducing impacts of Program actions. Please refer to Chapters 5, 6, and 7 in the Programmatic EIS/EIR for more detailed discussions of potential growth-inducing impacts of Program actions. For additional information, please see the Phase II Report.

## COMMON RESPONSE 18. DESALINATION

This common response addresses comments about desalination.

*Many comments address the fact that desalination was not considered as part of the CALFED Program. These individuals feel that desalination should be part of the solution and should be part of the Preferred Program Alternative. It was especially noted that desalination should be considered as a means to meet southern California demands versus exporting any additional water from the Delta. Some comments, however, state that desalination plants are too costly to maintain, even when not being used in "wet" years. Many comments state that CALFED should include funding for desalination technology research and development.*

**Introduction.** Desalination of wastewater or sea water is already in use on a modest scale in Southern California. Technological improvements are significantly reducing treatment costs. The costs remain high relative to the costs of other options, however, and are unlikely to contribute to a major portion of the available water supply for the region.

**Desalination versus Delta Exports.** In evaluating potential impacts of Program alternatives, CALFED considered potential future levels of exports from the Bay-Delta system that are both above and below current levels. If Bay-Delta exports are reduced, a variety of additional demand reduction and alternative supply measures would be required to replace the reduced Bay-Delta water supply. These measures could include desalination.

**Cost Effectiveness of Desalination.** CALFED has included the potential for local desalination of wastewater or sea water in its economic evaluation of water quality and water supply reliability options. CALFED's analysis of the cost effectiveness of different combinations of water management options to help meet California's anticipated water demands for 2020 is documented in the draft June 1999 CALFED report, *Economic Evaluation of Water Management Alternatives, Screening Analysis and Scenario Development*. Although not part of the Programmatic EIS/EIR due to its specialized content, the report has undergone stakeholder review and is available on request.

In conducting this preliminary screening of water management alternatives, the report considers a range of potential demand reduction, recycling, and sea water desalination options, as well as the economic costs of not meeting incremental water demands. The screening analysis links supply measures with demand regions and adjusts for costs at the place of use. The cost adjustments, either cost savings or additional costs, include the cost of transporting the water to its destination for use, the cost for reapplication and water quality, and the cost of treatment and distribution.

**Desalination Research and Development.** With further technological advances, the mix of local water supply options is likely to change. The role of desalination is likely to increase as the relative costs of reverse osmosis and micro-filtration processes continue to decline. As documented in CALFED's Implementation Plan (Section 2.2) and in the June 1999 Water Quality Program Plan (Table 4), CALFED recommends actions to advance practical desalination technology, both as a means for addressing agricultural drainage and for meeting urban water quality and water supply reliability needs.

**Adaptive Management.** No long-term plan for management of a system as complex as the Bay-Delta can predict exactly how the system will respond to Program efforts or foresee events such as technological improvements, earthquakes, climate change, or the introduction of new species to the



system. Adaptive management, as an essential Program concept, acknowledges the need to constantly monitor the system and adapt the actions that are taken to restore ecological health and improve water management. These adaptations will be necessary as conditions change and as more is learned about the system and how it responds. The Program's objectives will remain fixed over time, but the actions may be adjusted to ensure that the solution is durable. The concept of adaptive management is also an essential part of every CALFED Program element.

**COMMON RESPONSE 19. ASSURANCES**

This common response replies to comments requesting assurances.

*Several comments centered on the concept of “assurances,” or a level of certainty that the Program will take place in a specific manner or way. These comments expressed a need for assurances ranging from guaranteeing that the Program would be implemented as described in the Final Programmatic EIS/EIR to asking for assurances that specific streamflows would be met. A number of reviewers expressed concern about having assurances that local control would be protecting local interests as the Program is carried out. Some reviewers insisted that specific assurances elements, such as legislative action, must precede the signing of the ROD for the Programmatic EIS/EIR.*

Given the billions of dollars that will be spent over the next decade on CALFED programs, it is reasonable to expect that funds will be spent based on accountability and measurable progress being made on all elements of the Program. Progress will be measured in an annual report issued by the CALFED governing body. This report will contain status reports on all actions taken to meet CALFED objectives in Stage 1, including goals, actions, schedules, and financing agreements. The California State Secretary of Resources and the Secretary of the Interior will review this annual report to determine adherence to the schedule and objectives established in the final ROD. If necessary, a revised schedule will be prepared to ensure that balanced solutions in all problem areas are achieved consistent with the intent of the final ROD. Funding will not be made available in subsequent budget years if a revised schedule has not been developed within 6 months after the Secretaries determine that the previous schedule had not been substantially adhered to.

A high level of stakeholder participation will be incorporated during the Program’s implementation. Central to implementation will be a science-based adaptive management component as the Program includes a strong commitment to assure that its decisions and actions are based on well-grounded science. A comprehensive monitoring and data collection feature, as well as continuous and comprehensive scientific review of actions and decisions, are included as part of the Program. The highest quality and credibility of science-based decision making will be assured through an independent panel of scientific experts. The Program will hire a nationally recognized scientist to coordinate the science effort, including related scientific studies conducted by the CALFED agencies.

The Program is designed to be implemented in stages, with adaptive management as the tool for modifying how the Program is carried out based on scientific data and what is learned at each stage. It would be impractical to develop project level approaches and an assurances package that could anticipate all the possible combinations of actions and their effects, and guarantee that all these outcomes would meet the stated criteria. Many other examples of assurances in the individual programs include the groundwater principles (see common response 6) and the commitment that there will be no reduction in CVP/SWP deliveries during the first 4 years of Stage 1 (see common response 21). Site-specific environmental documentation of individual projects will provide an additional level of review that will result in site-specific assurances.

Some other recurring topics regarding assurances are addressed below.

**Balanced Program Progress and Implementation.** It is essential that balanced progress be made in all program areas. Actions for Stage 1 and Stage 1a (the first 2 years) provide for balanced implementation through a proposed staged decision process which incorporates new scientific information

as it is developed, impartial scientific review, and broad-based policy considerations. Providing adequate time for the process, scientific evaluations, and working accurately and completely must be implementation priorities. Stage 1 is estimated to be completed in 7 years; these time estimates were based on the assumption that no major technical, logistical, financial, or political issues hinder progress. Program linkages, as addressed in the Programmatic EIS/EIR and in language of Proposition 204, provides that progress will occur in all areas. Other linkages may be developed that bind Program elements together, such as agreements among implementing agencies.

Determining a long-term governance structure is another essential element in assuring balanced Program progress and implementation. Stakeholders, whose active support is necessary to maintain funding and programs, as well as the CALFED agencies, strongly believe that a new public agency must be created to oversee the long-term implementation of the CALFED Preferred Program Alternative.

The CALFED agencies will develop an interim governance structure similar to what currently is in place until appropriate legislation can be completed to establish a permanent structure. This interim structure will be set forth in a new "Framework Agreement," which the agencies will develop and execute by September 2000. CALFED proposes that a joint federal-state commission with shared power to appoint commission members is the best permanent governance structure for the Program. The legislative charge to this new commission should be to provide direction and oversight to the Program as described in the Final Programmatic EIS/EIR.

Major responsibilities of this commission would include reviewing and approving Program priorities and budget proposals; assessing and reporting about the progress toward Program goals; coordinating within CALFED and related programs to best use resources and reduce conflicts; resolving disputes between the CALFED agencies; and maintaining communications with the public, the media, and elected state and federal officials. The overarching mandate of the commission will be to assure effective, balanced, and coordinated implementation in all Program areas.

**Regulatory Assurances.** The current proposal for CALFED governance includes an oversight entity that would help assure that all Program elements are properly coordinated with local regulations and jurisdictions as well as with the federal and state ESAs. The MSCS provides a framework for compliance with the federal and state ESAs, which in turn provides a measure of certainty that implementation will occur and anticipated Program benefits will be provided.

CALFED will comply with the federal ESA for adoption of the CALFED Program through programmatic Section 7 consultations with the USFWS and NMFS. The MSCS will serve as the biological assessment of the CALFED Program in support of the Section 7 consultations and will be submitted to DFG for approval as a programmatic Natural Community Conservation Plan (NCCP). Neither the programmatic biological opinions nor the programmatic Natural Community Conservation Planning Act (NCCPA) determination will fully comply with the ESAs for individual Program actions or authorize take of the species covered in the MSCS. Instead, federal and state ESA and NCCPA compliance, including any required take authorization for Program actions, will follow through a streamlined, action-specific consultation process that tiers from the MSCS and the programmatic consultations, or will be covered under existing biological opinions.

In addition, the MSCS provides the framework for assuring cooperating landowners that they will not be prevented from continuing their existing land uses because of the implementation of CALFED Program actions or MSCS conservation measures. Many landowners may be concerned that if the number of

threatened and endangered species within the focus area increases, the use of land or water in or near the species habitat will be restricted by the federal and state ESAs. Cooperating landowner programs are intended to address this concern and to preserve compatible land uses within the focus area.

Other comments suggested regulatory assurances were needed to help carry out or achieve standards set by such Program elements as water use efficiency or water quality. CALFED agrees that in some instances regulatory measures may be needed to ensure that Program elements achieved; however, CALFED is not proposing to change any regulations, water rights, or standards. Individual CALFED agencies will continue to exercise their authority. Water rights, for example, are under the jurisdiction of the SWRCB. The Board currently is determining how to meet Delta water quality standards.

**Assurances Regarding Water Distribution and the EWA.** Some people expressed their desire to see assurances that water gained through conservation, reclamation, recycling, or water associated with the EWA primarily be used for environmental uses. See common response 21 for more details. The Water Management Strategy will seek to improve water supply reliability for all water users. Additional review and analysis of new demands and new infrastructure are needed to determine the impacts of Water Management Strategy actions and will be completed in site-specific documentation tiering from this Programmatic EIS/EIR. Existing programs, such as those under CVPIA Section 3406(b)(1), (b)(2), and (b)(3), are coordinated with the Water Management Strategy and the EWA.

The amount of water available to the EWA depends on many factors, including the amount of funding for voluntary water purchases, water supplies developed from various sources such as recycling, and access to storage and conveyance facilities. Regardless of how water for the EWA is derived, the underlying guidance for water supply distribution under the Water Management Strategy will be the many water rights and environmental laws with which CALFED and its participating agencies must comply in achieving the CALFED objective of restoring the Bay-Delta ecosystem.

Please see common response 1 for a discussion about the inter-related nature of CALFED Program elements and common response 22 for a discussion of whether CALFED is supposed to solve all of California's water problems.

## COMMON RESPONSE 20. SOLUTION PRINCIPLES

This common response addresses comments about the CALFED solution principles.

*Many comments indicate that the CALFED Program is not following the solution principles that it developed in conjunction with its mission statement and objectives. Most comments focus on the principle of "Pose no significant redirected impacts." Others mention "Reduce conflicts in the systems" and "Be equitable."*

**Introduction.** Given the history of conflict in the Bay-Delta system, CALFED recognizes that any proposed program to address this broad spectrum of resources will be controversial. Stakeholders participating in the CALFED process already have identified significant concerns about virtually every component of the Program. Carrying out the mission, achieving the objectives, and adhering to the solution principles will ensure that CALFED fulfills its commitment to continuous improvement in the four identified problem areas: ecosystem quality, water quality, water supply reliability, and levee system integrity.

**CALFED Solution Principles.** The solution principles were developed early in the planning process as a means to achieve the Program's objectives in the context of a multi-purpose mission and a history of competing and contentious environmental, political, and institutional influences on the affected resources. The solution principles provide an overall measure of the acceptability of alternatives to different constituencies and guide the design of the institutional part of each alternative.

In the past, most efforts to improve water supply reliability or water quality, improve ecosystem health, or maintain or improve the Delta levees were single-purpose projects. Single-purpose projects have the potential to solve one problem but create other problems, thereby engendering opposition to future actions.

The CALFED Program has taken a different approach, recognizing that many of the problems in the Bay-Delta system are inter-related. Problems in one resource problem area cannot be resolved effectively without simultaneously addressing problems in all four problem areas. As a result, the Program as a whole needs to be evaluated against the solution principles. Solution principles are not intended to be applied to individual components of the Program.

**No Significant Redirected Impacts.** The "Pose no significant redirected impacts" solution principle states that "Solutions will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in their entirety, within the Bay-Delta or to other regions of California." To address the primary objectives of the CALFED Program, all stakeholders/users will experience some impacts. When the Program is viewed in its entirety, solutions do not simply redirect impacts from one area to another. The solutions are a broad range of actions that are designed to meet the Program objectives and result in benefits to all stakeholders and users, as well as impacts. Looking at individual portions of the Program does not provide the view of the entire Program and how the Program conforms to meet the solution principles.

**Reduce Conflicts.** This principle states that solutions will reduce major conflict among beneficial uses of water. As an example, the goal for water supply reliability is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. This can be accomplished by the water supply reliability objectives: maintain an adequate water supply to meet

expected in-Delta beneficial use needs, improve export water supplies to help meet beneficial use needs, improve the adequacy of Bay-Delta water to meet Delta outflow needs, reduce the vulnerability of Bay-Delta levees, and improve the predictability of the water supply available from the Bay-Delta system for beneficial use needs.

These objectives collectively reduce the conflict among beneficial water users, improve the ability to transport water through the Bay-Delta system, and reduce the uncertainty of supplies from the Bay-Delta system.

**Equitable Solutions.** This principle states that solutions will focus on solving problems in all four problem areas. Improvement for some problems will not be made without corresponding improvements for other problems. To determine the best way to fulfill its mission, CALFED undertook to address the four identified problems concurrently and comprehensively. To simultaneously address the four problem areas, actions will need to be taken throughout all of the Program problem and solution areas. While on an individual or site-specific basis it may appear that CALFED is not following this solution principle, at the Program scale, all four problem areas are being addressed concurrently.

**References to Relevant Provisions in the Programmatic EIS/EIR.** Please refer to common response 5 for more information on the alternative development process. Please see Chapter 1 in the Programmatic EIS/EIR, "Program Description," for a description of the Program. Please refer to Chapter 2 in the Programmatic EIS/EIR, "Alternative Descriptions," for a description of the alternatives evaluated.

## COMMON RESPONSE 21. ENVIRONMENTAL WATER ACCOUNT

This common response addresses comments about the Environmental Water Account (EWA).

*Most of the comments on the requested more detail on the Account. These included questions on how the water would be managed and who will pay. Major concerns included potential impacts, the need to coordinate the EWA with the Ecosystem Restoration Program and the Central Valley Project Improvement Act (CVPIA), and the need for regulatory relief and assurances. Based on extensive planning and analyses since the June 1999 Draft Programmatic EIS/EIR, CALFED has refined how the EWA will work during the initial part of Stage 1.*

The EWA is part of CALFED's Water Management Strategy, designed to improve fisheries protection and recovery while providing improvements in water quality and water supply reliability. The EWA will rely on more flexible management of water based on real-time needs of the fishery resources. The EWA functions primarily by changing the timing of some flow releases from storage and the timing of water exports from the south Delta pumping plants to coincide with periods of greater or lesser vulnerability of various fish to Delta conditions. The EWA will be established to provide water for protection and recovery of fish beyond water available through existing regulatory actions related to project operations.

**EWA and Prescriptive Standards.** The EWA is based upon the concept that flexible management of water will achieve fishery and ecosystem benefits more efficiently and to a greater degree than a completely prescriptive regulatory approach. By managing EWA "assets" (water, storage, money, operation rights) on a real-time basis, the overall cost of environmental protection can be lower than under a purely prescriptive approach and enhanced environmental benefits (i.e., restoration and recovery) can be realized. This would help attain water supply reliability objectives for water users and improve fisheries conditions. In addition, by managing the EWA in close coordination with other parts of the water management strategy, multiple benefits may sometimes be achieved from the use of EWA assets. For example, at times EWA water to achieve a fishery purpose also may provide water quality benefits.

**EWA Development.** To gain insight into whether and how an EWA could improve fish conditions while protecting water quality and water supply benefits, a group including CALFED Agency staff and stakeholders have simulated numerous EWA /CVPIA operations scenarios. These EWA "gaming" exercises allowed project operators, fishery agency biologists and stakeholders to work together to simulate operational decisions to react to the changing hydrological and biological conditions typical of the Sacramento-San Joaquin watersheds and the Delta. The simulations allowed them to see how the system may respond to potential configurations and applications EWA of assets.

The group conducted a number of simulations to better understand how an EWA might have been operated in "real time" if it had existed during the 1981 through 1994 water years. This period included a variable hydrologic sequence of wet years and dry years to test the EWA, but does not reflect all the variation that EWA management could encounter. In each simulation, the EWA had access to a different collection of facilities, contracts, rights, and income. Differing assumptions were also made about the application of CVPIA Section 3406b(1) and b(2). In some simulations, the EWA had access to new storage and/or new export pumping capacity. In all simulations the EWA had access to unused project capacity and the ability to allow variances in application of the Export/Inflow standard in order to generate environmental water. In some simulations, the EWA had a budget for water purchases. One simulation was run solely to determine how much water would be required to achieve "adequate" biological protection from the point of view of the fishery agencies.

Changes in operations were simulated using a set of assumed EWA and historical hydrology and fish salvage records, starting from a model representation of project operations with current regulatory conditions. The group then evaluated the effects of their decisions on fish resources, water quality, water supply reliability, and the EWA account.

**EWA Structure.** During Stage 1, the EWA would work from a foundation of the existing regulatory regime. The EWA would not be a substitute for existing prescriptive standards but would avoid potential new standards. The EWA will be established to provide water for the protection and recovery of fish beyond water available through existing regulatory actions related to project operations. The EWA will benefit water users by providing additional water for fish without the need to reduce project deliveries. The EWA will be authorized to acquire, bank, transfer and borrow water and arrange for its conveyance. EWA assets will be managed by the federal and state fishery agencies (U.S. Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], and California Department of Fish and Game [DFG]) in coordination with project operators and stakeholders, through the CALFED Operations Group. Initial acquisition of assets for the EWA will be made and funded by Federal and State agencies (U.S. Bureau of Reclamation and California Department of Water Resources). Subsequently, it is anticipated that acquisitions and cost allocations among beneficiaries will be made pursuant to a public process that could involve other agencies and other potentially affected parties in asset acquisition.

To provide regulatory stability during the initial period of Stage 1, the CALFED agencies will provide a commitment, subject to legal requirements, that for the first four years of Stage 1, there will be no reductions, beyond existing regulatory levels, in CVP or SWP deliveries from the Delta resulting from measures to protect fish under the federal and state Endangered Species Acts (ESAs). This commitment will be based on the availability of three tiers of assets. Tier 1 is baseline environmental protection, provided by existing regulation and operational flexibility. The regulatory baseline consists of the biological opinions on winter-run chinook salmon and delta smelt, 1995 Delta Water Quality Control Plan, and 800,000 acre-feet (800 TAF) of CVP yield pursuant to CVPIA Section 3406(b)(2). See the EWA section in the Phase II Report for more detail on the regulatory baseline.

Tier 2 consists of the assets in the EWA combined with the benefits of the Ecosystem Restoration Program and is an insurance mechanism that will allow water to be provided for fish when needed without reducing deliveries to water users. Tier 1 and Tier 2 are, in effect, a water budget for the environment and will be used to avoid the need for Tier 3 assets. It is unlikely that assets beyond those in Tier 1 and Tier 2 will be needed to meet ESA requirements. However, if further assets are needed in specific circumstances, a third tier will be provided. Tier 3 is based upon the commitment and ability of the CALFED agencies to make additional water available should it be needed. In considering the need for Tier 3 assets, the fishery agencies will consider the views of an independent science panel. Tier 3 assets may include additional purchases from willing sellers or consensual “borrowing” of water beyond the collateral-based borrowing which is allowed as part of the EWA (Tier 2).

The ESA commitment will be in effect for four years based on Ecosystem Restoration Program implementation and all of the agreed upon assets being available in that period. It is anticipated that sufficient assets, either from existing sources or from supply augmentation, will be available for the protection of fish beyond the first four years, and that the commitment will be extended. The only exception to this commitment would arise in the extremely unlikely event that, despite the utilization of all measures available in the three tiers, a determination is made that a situation of jeopardy to a listed species nevertheless is likely.



The EWA would make use of all of the water management tools as shown in the previous table. Especially in its first few years of operation, a substantial portion of the assets needed for the EWA will come from access to existing Project flexibility, new changes in project flexibility (for example, joint point of diversion and export/inflow ratio flexibility) and through voluntary purchases (estimated at \$50 million annually) on the water transfer market. Given these market based water transfers, the EWA will have an effect on the cost and availability of water transfer capacity. See the EWA section in the Phase II Report for more detail on EWA assets.

CALFED's analysis of the EWA shows that the EWA "performance" increases as the EWA's access to surface and groundwater storage increases. Flexibility in project operations and improvements in conveyance facilities can both help deliver environmental water at the desired place and time and can help create new EWA "assets." This flexibility is essential for the EWA for it must be operated in tandem with 3406b(1), b(2), and b(3) water provided under the CVPIA. Finally, the EWA cannot function without the comprehensive monitoring program envisioned in CALFED's Science Program.

Water quality concerns must also be considered in managing the EWA. Operational changes to enhance the protection of aquatic resources and maintain export supplies have the potential to affect water quality, either positively or negatively. Management of the EWA must be coordinated closely with operation of the State and Federal water projects and the CALFED Water Quality Program.

The EWA will provide fisheries protection and recovery while providing improvements in water supply reliability primarily by changing the timing of some flow releases from storage and the timing of water exports from the south Delta pumping plants. These real-time operational changes will be dependent on assessment of and response to varying conditions. For example, water exports from the Delta may be reduced at times when certain fish species are most vulnerable to this pumping and may be increased when the fish are less vulnerable. The timing of operational changes would vary from year to year depending on many factors such as hydrology and real-time monitoring that shows the movement and presence of fish. Examples of how the EWA may use its assets follows:

- If additional export reductions are needed to protect Delta smelt during late May and June, the EWA compensates for the quantity of export foregone by turning over to State and Federal Project water users EWA water previously pumped and now stored in San Luis Reservoir. If the EWA had not previously stored water in San Luis Reservoir it would temporarily borrow stored State and/or Federal water in San Luis Reservoir.
- Since the EWA is not allowed to cause any new delivery reductions, it must pay back most or all of the borrowed water in time to avoid impact on current year's deliveries or the following year's allocations.
- The EWA would repay the loan using various available assets. It might:
  - Use EWA groundwater supplies in the export area.
  - Invoke water purchase contracts in the export area.
  - Invoke agreements with local agencies in the export area whereby the agencies have agreed to meet some part of their water use from local sources (groundwater or surface storage) until after the low point in San Luis Reservoir storage is passed.

- Relax the E/I standard to move more water to the export area.
- If the San Luis low point could be passed without the repayment of all the debt, the EWA might carry the debt into the next winter in the hopes that high Delta inflows would allow San Luis Reservoir to refill without additional EWA expenditures.
- The EWA water held upstream can later be released to improve instream conditions below the reservoirs and then either (1) be pumped from the Delta to pay off an EWA debt in San Luis Reservoir or add to EWA water stored there, or (2) left to provide increased Delta outflow.

The CALFED Program will coordinate with EWA implementing agencies (DFG, USFWS, and NMFS) to ensure CALFED objectives are being met. Coordination and consultation efforts among the CALFED Operations Group, project operations, ESA management agencies, the program manager of the Ecosystem Restoration Program, and stakeholder groups are intended to ensure that the environmental water acquisitions are consistent with the CALFED Program goals and objectives and that conflicts with ESA requirements and project operations are minimized or avoided.

CALFED expects that the regulatory assurances provided during the first 4 years of Stage 1 will be extended throughout Stage 1. CALFED will develop rules for storing, conveying, and borrowing of EWA water. At the same time, CALFED will develop an accounting process to track the EWA water. Like other parts of the CALFED Program, the EWA will be adaptively managed as experience is gained with its use and effectiveness. In the future, the EWA may gain additional assets as new facilities are implemented or operational changes are made. How EWA will share in the use of these facilities will be determined as these are developed.

## COMMON RESPONSE 22. WILL CALFED SOLVE CALIFORNIA'S WATER PROBLEMS?

This common response addresses comments about CALFED's relationship to California's overall water problems and meeting future demands.

*Many comments express the concern that the CALFED Program (Program) will reduce water supply reliability in the state. Other comments express the opinion that the CALFED Program should assure that all future water demands in the state are met.*

All CALFED solutions, including the Preferred Program Alternative, will improve water supply reliability in the state. However, CALFED solutions will not solve all of California's water problems or meet all future water demands.

The CALFED mission is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. As part of that mission, one broad objective is to "Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system." CALFED has amplified this objective by developing a three-part strategy to improve water supply reliability. To guide the implementation of this multi-part strategy, CALFED has identified three primary goals:

- Increase the utility of available water supplies (making water suitable for more uses and reuses).
- Improve access to existing or new water supplies, in an economically efficient manner, for environmental, urban, and agricultural beneficial uses.
- Improve flexibility of managing water supply and demand in order to reduce conflicts between beneficial uses, improve access to water supplies, and decrease system vulnerability.

The Program is striving to balance multiple objectives in the Bay-Delta system in order to accomplish the CALFED mission. CALFED's Water Management Strategy will improve water supply reliability in the state through conveyance and storage actions and ecosystem restoration activities that will improve the resiliency of the Bay-Delta ecosystem, reduce demand by encouraging implementation of water use efficiency and recycling measures, and improve the transfer of water supplies to more effectively move water between users on a voluntary and compensated basis.

CALFED assessed potential water supply reliability improvements associated with the various Program alternatives as part of the Programmatic EIS/EIR. To provide a basis for this assessment, a No Action Alternative was defined. While existing conditions often provide an adequate basis for assessing the consequences of future actions, implementation of the Program is expected to occur over 30 or more years. Demands for water supplies, ecosystem health, and water quality conditions are not expected to remain constant over this extended time period. To account for this uncertainty, the No Action Alternative was defined to include a range of future water demands and constraints to Bay-Delta exports. When evaluated through system operations modeling, these competing assumptions result, in turn, in a range of possible future Bay-Delta exports. In Section 5.1 in the Programmatic EIS/EIR, the effects of actions included in the various Program alternatives on water supply reliability are evaluated and compared to both ends of the No Action Alternative range.

To illustrate how Program actions are expected to effect water supply reliability, consider one key element of the state's water supply mix—Delta deliveries. Average annual water deliveries from the Delta are approximately 5.4 MAF under existing conditions. In the absence of a Bay-Delta Program, increases in population likely will drive demand for Delta water supplies higher, while continued degradation of the health of the Bay-Delta ecosystem could further constrain Delta exports. As evaluated in the Program's No Action Alternative, these two opposing forces could drive average annual water deliveries from the Delta as low as 4.8 MAF or as high as 5.8 MAF over the next 30 or more years. Deliveries at the low end of the range could result from additional protective Delta water management criteria. Deliveries at the high end of the range could result from higher Bay-Delta system demands and generally would take place in above-normal and wet years, when unallocated flows are available for export in the Delta. This No Action Alternative range (4.8-5.8 MAF) serves as the basis for assessing Delta water supply reliability improvements of the various Program alternatives.

Continuing the illustration, now consider water supply reliability improvements provided by CALFED's Preferred Program Alternative. Under the Preferred Program Alternative, conveyance improvements and possible new storage would increase the reliability of Delta water supplies. The amount of this increase depends on assumptions regarding future population and constraints to Delta exports. To provide a consistent basis of comparison, the same range of assumptions used under the No Action Alternative to describe future demands for Delta water supplies and constraints to Delta exports were applied to the Preferred Program Alternative. As described in Section 5.1 in the Programmatic EIS/EIR, the range of average annual water deliveries from the Delta under these assumptions ranges from 5.1 to 6.7 MAF. Therefore, the Preferred Program Alternative would increase average annual Delta deliveries by as little as 300 TAF (5.1 MAF minus 4.8 MAF) or by as much as 900 TAF (6.7 MAF minus 5.8 MAF) relative to the No Action Alternative. Deliveries at the low end of the range could occur if new storage is not constructed and Delta exports are further constrained. Deliveries at the high end of the range could take place if new storage is added and new constraints to Delta exports are not necessary. These Program benefits are in addition to any water supply reliability gains due to water use efficiency measures, water conservation measures, and additional water transfers.

Similar to the Preferred Program Alternative, all Program alternatives would improve statewide water supply reliability when measured against the No Action Alternative. Because of the uncertainty in future population and Delta conditions, it is inappropriate to measure Program performance against existing conditions.

Conversion of Delta land use from agriculture to wetlands and marshes under the Ecosystem Restoration Program could result in increased water use and potential negative impacts on agriculture and urban water supply reliability. At present, a high level of uncertainty is associated with the acreage of land that may be converted or the incremental water requirements of such conversions. Monitoring and adaptive management principles will be part of any CALFED land use conversion project. CALFED is committed to mitigating impacts that would compromise the Program's overall water supply reliability objective. The combined beneficial effect on water supply reliability from actions under the Preferred Program Alternative, including the Water Quality Program, Water Use Efficiency Program, Water Transfer Program, conveyance improvements, and potential new water storage facilities, is expected to offset this potential loss of water supply—resulting in no significant adverse impacts.

All CALFED solutions will improve water supply reliability in the state. However, CALFED solutions will not solve all of California's water problems or meet all future water demands. Many regions of the state are not served by the Bay-Delta system and are outside the Program's solution area. Future demands

for water in severe dry conditions likely will result in the need for some rationing or water supplies and some degree of economic hardship. Program studies indicate that, given the current knowledge of the Bay-Delta system, it is not possible to safely develop enough additional supply from the Bay-Delta system—while meeting all Program objectives—to eliminate all future shortfalls. While California water managers must continue to consider and compare the economic, environmental, and social consequences of developing alternative supplies in other water management planning forums, a likely conclusion will be that some level of shortage must be accepted in some years.

## COMMON RESPONSE 23. PUBLIC TRUST DOCTRINE

This common response addresses comments about the Public Trust Doctrine.

*Many comments suggest that the CALFED Program is ignoring or improperly incorporating the Public Trust Doctrine with respect to proposed management of water resources and ecological resources. Still others suggest that CALFED could more fully address the Public Trust Doctrine.*

**The Public Trust Doctrine.** The Public Trust Doctrine incorporates two ideas: (1) that the state holds title “in trust” to certain properties within the state for the beneficial use of the public, and (2) that public rights of access to and use of tidelands and navigable waters are inalienable. Traditional public trust rights include navigation, commerce, and fishing. California law expanded the traditional public trust uses to include protecting fish and wildlife and preserving trust lands in their natural condition for scientific study, scenic enjoyment, and related open-space uses.

In the 1980s, the Public Trust Doctrine was used by courts to limit traditional water rights. The California Supreme Court, in its 1983 decision in *National Audubon Society v. Superior Court of Alpine County*, held that public trust uses must be considered and balanced when rights to divert water away from navigable water bodies are considered. The court also held that California’s appropriative rights system and the Public Trust Doctrine embody important precepts that “... make the law more responsive to the diverse needs and interests involved in planning and allocation of water resources.” Consequently, in issuing or reconsidering any rights to appropriate and divert water, the State must balance public trust needs with the needs for other beneficial uses of water.

In *United States v. State Water Resources Control Board* (commonly referred to as the Racanelli Decision), the State Court of Appeal reiterated that the Public Trust Doctrine is a significant limitation on water rights. In that 1986 case, the appellate court broadly interpreted the SWRCB’s authority and obligation to establish water quality objectives, as well as its authority to set water rights permit terms and conditions that provide reasonable protection of beneficial uses of Delta water and of San Francisco Bay. The court stated that SWRCB needed to separate its water quality planning and water rights functions. SWRCB needs to maintain a “global perspective” in identifying beneficial uses to be protected (not limited to water rights) and in allocating responsibility for implementing water quality objectives (not only to the SWP and CVP, or only through the SWRCB’s own water rights processes). The court recognized the SWRCB’s authority to look to all water rights holders to implement water quality standards and advised the SWRCB to consider the effects of all Delta and upstream water users in setting and implementing water quality standards in the Delta, as well as those of the SWP and the CVP.

**Restoring and Protecting Public Trust Resources.** The CALFED Program seeks to restore the Delta ecosystem as one of its four co-equal Program purposes. CALFED is proposing the Ecosystem Restoration Program as a means of restoring and protecting public trust resources. This program includes the proposal to acquire additional water, from willing sellers, to augment streamflows in order to benefit fish and other aquatic resources, as well as to acquire interests in land, from willing sellers, and cooperative agreements in order to support ecosystem restoration efforts. CALFED recognizes that the decline of ecological resources are the result of multiple causes throughout the ecosystem, including land use changes, introduction of exotic species, toxic materials, water diversions, dams, canals, highways, and intensified human use of virtually all aspects of the environment. CALFED’s Ecosystem Restoration Program proposes to address many of these issues through cooperative, not regulatory, means. Within that

framework, CALFED seeks to augment streamflows in key stream reaches on a voluntary and compensated basis, with appropriate protections for third parties that may be affected by reallocation of water by these means. Similarly, proposed land use changes will take place on a voluntary, compensated basis in order to respect private property rights and local economic concerns. Protecting public trust resources in this manner is entirely consistent with the California Supreme Court's direction to protect public trust resources where feasible.